The Builder.

No. CCCLIX.

SATURDAY, DECEMBER 22, 1849.

ON the 26th of this month, the new Olympic Theatre, in Wych-street, Strand, built under the direction of Mr. Frederick W. Bushill, architect, will be opened for dramatic representations, under the management of Mr. W. Watts, the late manager of the "Marylebone Theatre," which was the work of the same architect. We give a plan of the new theatre, and a general view of the interior,* and next week we shall add a working section, showing the whole construction.† Drury-lane appears to have had its name from a house built there by Sir William Drury, a commander in the Irish wars, in the time of Queen Elizabeth, and who afterwards fell in a duel through a quarrel about precedency. Before "Drury House" was built, the old name for the lane was *Via de Aldewych*, and we have still the continuation of it, called Wych-street in consequence. Drury-lane was for some time an aristocratic quarter, but lost this character early in the reign of William III.,‡ and soon became celebrated for quite other inhabitants. Goldsmith, in his lines on a poet's lodging, speaks of "the drabs and bloods of Drury-lane;" and Pope uses the same term in the line—

"Paltry and proud as drabs in Drury-lane;"

Love of alliteration may have had something to do in suggesting it to both.

Drury House, in the seventeenth century, came into the possession of Lord Craven, afterwards Earl Craven, celebrated for his efforts to stay the ravages of fires, then so frequent in London, who rebuilt it, as Craven House. This underwent various changes, and was ultimately taken down. In August, 1805, Earl Craven granted a lease of the premises to the late Philip Astley, who covenanted to build "a good and substantial theatre, or amphitheatre, for the acting of pantomimes and other performances." This lease was sold to Elliston, and afterwards assigned to John Scott, the former proprietor of the Sans Pareil (the Adelphi), and is now vested in Mr. John Cavell, of Guildford-street, who married a daughter of Scott.

The old theatre, opened by Astley as the "Olympic Pavilion," September 18, 1806, was constructed principally of wood, from the timbers of an old man-of-war, *La Ville de Paris* (the ship William the Fourth went out in as midshipman), which was given by George the Third to Astley, who had been the riding-master to the younger branches of the royal family, and was a great favourite of the old king. The king also gave the chandelier.

On the 29th March, 1849, the theatre was entirely destroyed by fire. The building was insured in the County Fire Office for 2,500*l.*§

On the 30th June, in the same year, the first brick of the new house was laid; but it was not until the beginning of August that the excavation was completed, and the bricklayers were fairly at work.

The new building is on the site of the old theatre,—an irregular plot of ground, averaging about 100 feet deep by 75 feet wide, with frontages to Wych-street (south-west front), Maypole-alley, and Craven-passage, and running back in the rear of the houses in Wych-street and Craven-buildings. The stage occupies the whole width of the ground at the north-west end, by about 44 feet deep; the remaining portion is used for orchestra and the audience.

The basement is a half-sunk story. The part under the stage is used for the purposes of the machinery connected with the stage, traps, sliders, &c., and communicating with it is a dock for scenery on one side; a music-room, a property-room, and a gas-room, on the other. Under the back part of the pit, and the principal entrances, are four large and three smaller dressing-rooms, separate water-closets, &c. The dressing-rooms have fire-places, and sinks with water laid on. The remaining portion of the basement is used for stowage and coals.

On the *Ground Floor* (and shown on the plan), are the principal entrances—those to the boxes and pit being in Wych-street, and those to the gallery and stage in Craven-passage; and there are additional fire-proof ways *out*, both from gallery and pit,—important in the event of fire; also the pit and pit-stalls, with separate entrances to stalls; two proscenium boxes and two private boxes, a refreshment-room, water-closet, &c.; the orchestra, proscenium and stage, green-room, porters' room, and entrance to stage, with separate way for horses and scenery.

On the *Box Floor* are six private boxes, three on each side; four tiers of dress and two tiers of back seats, in the centre of the house; a corridor at back of boxes, with separate staircases to slips and private boxes; a small *salon*, ladies' cloak-room, separate water-closets, urinal, &c.

On the *Gallery Level* are two private (proscenium) boxes and four slip boxes, a spacious gallery, with refreshment place, carpenters' store-rooms, &c. Over the sides and back of the stage are the flies and painting-room; and there are two best dressing-rooms, closet, &c., over the green-room and stage entrance.

In the roof, over pit and gallery, is the carpenter's workshop, 40 feet long by 45 feet wide, communicating with the flies and painting room.

At Q on the plan, is a fire-proof passage communicating with the manager's house in Craven-buildings, which contains some additional dressing rooms.

With respect to *construction*, there is a single span queen roof 56 feet bearing, in clear of walls; the tie beams (in one length) are 14 inches by 6½ inches; the queen posts, 9 inches by 6½ inches; the principal rafters and collar, 9 inches by 6½ inches; the purlins, 9½ inches by 5 inches, and the plates, 9 inches by 6 inches.

The main walls are 3½ bricks thick up to pit: 3 bricks above.

The gallery and box floors are framed with girders, 12 inches by 12 inches, one end into granite corbels in walls, the other end supported by iron columns, 4 inches by 5 inches diameter. To prevent the thrust inwards, from the great inclination of the floors (the gallery timbers rising three feet in five), the ends of the girders have been secured by iron ties and granite bond, 6 inches by 4 inches, built in the walls, flush outside, and the whole floor is framed on the principle of a horizontal truss, with abutments from the longitudinal walls.

There are two fire-proof (stone) staircases to the gallery, one for entrance and *both for exit*, already referred to. There are also two ways out of pit, and separate way from stalls and boxes, so that the house may be cleared in a few minutes. The whole of the entrances, passages, &c., including staircases (slate) to the private boxes and slips, are fire-proof. The floor of lobby round back of boxes is of slate on pugging.

The house is ventilated by an air shaft over the chandelier through the roof, a large ventilator through the roof at the back of the gallery, a tier of semi-circular windows between gallery floor and ceiling. There are also air flues in all the walls, communicating with various parts of the house, and four internal air shafts from the back of the pit and boxes through the roof; the upper part of each of these shafts is rarified by gas burners, which at the same time light the back of gallery.

The stage and machinery were designed and executed by R. J. Strachan, the well-known stage-machinist, who, as he tells us, has designed and constructed the machinery of eight of the principal London theatres.

The stage, 55 feet wide and 45 deep, is so arranged that any portion can be removed singly or altogether, as occasion may require. These movements are effected by means of multiplying windlass barrels placed on each side of the basement-floor, adjusted by a new species of machinery, by which the level of the stage is depressed into inclined grooves, wrought in the sides of the principal timbers of the stage, and thereby drawn off to any distance required; in point of fact, the whole of the practical surface of the stage may be cleared, leaving nothing but the skeleton, in two minutes; so that, if required to show a gulph or chasm in scenic arrangement, the means of effect are very great. The stage is an inclined plane, of ½ inch to the foot, and is arranged with four entrances, with working grooves for wings and flats, the whole made practicable. The traps are worked by graduated balance-weights, so that any degree of velocity can be obtained by setting them accordingly. The gas battens are the whole length of the proscenium, and are also hung with balance-weights. The borders are hung in a similar manner. The painting-room is at the back of the stage, above the "flies," and there is a frame working down on to the stage, on which the scenes can be placed, and taken up and painted with the least possible trouble. The scene repository, at the north-west angle, on the site of the old painting-room, will hold sixty pairs of flats.

The form of the theatre is an elongated horse shoe, with but few projections, so as not to present any interruption to sight or sound. The endeavour of the architect has been to get a well formed theatre, of good proportions and harmonious lines, with little extraneous ornament. It may be observed that the pit seats are circular on plan, so that each person looks directly to the centre of the stage. The ceiling and proscenium are *match boarded*, and canvassed for decorations.* The height from the pit floor to the highest part of the ceiling is about 36 feet. The stalls contain 38 sittings, the pit will hold from 800 to 850 persons, the boxes about 200, and the gallery 700 to 750.

* See page 606 in our present number.

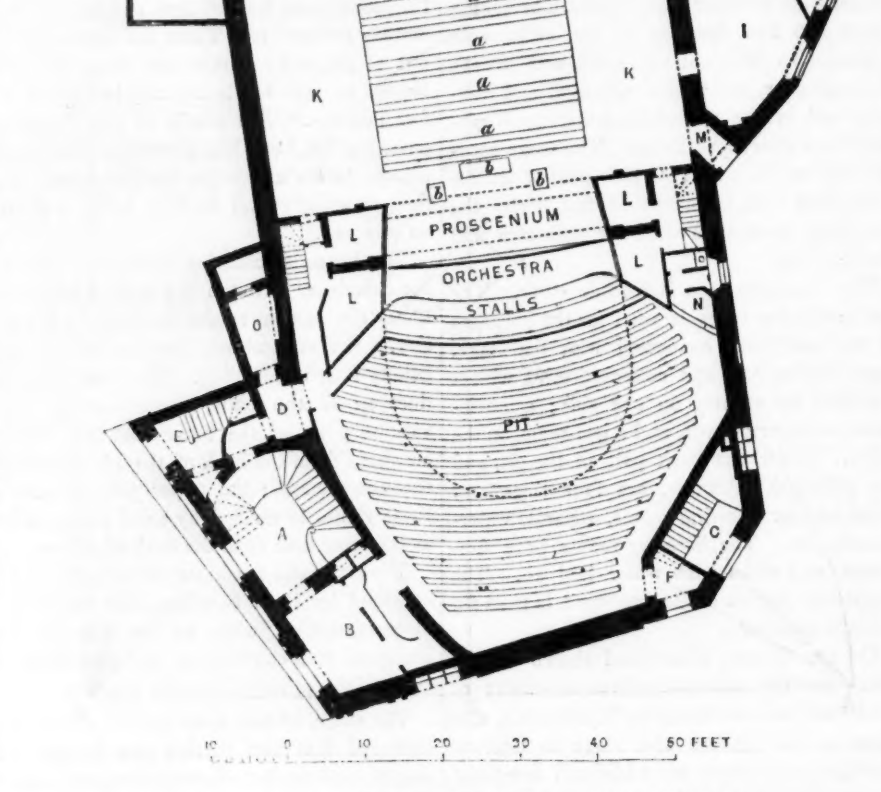
† In other numbers of THE BUILDER will be found views and particulars of the Royal Italian Opera House; the Theatre Royal, Drury-lane; the Theatre Royal, Lyceum; and the *Theâtre Historique*, Paris. Detailed accounts of the new Manchester Theatre, the Prince's Theatre, Glasgow, &c., are also given.

‡ "Handbook of London."

§ The writer had a pleasant recollection of the old Olympic Theatre. It was here in younger days that he first penetrated the mysteries of the *coulisses*, to superintend the production of a farce, and waited, breathless, in a side box, to hear what reception the public would give, on the first night, to "The Last Day."

* The boarding was first desiccated.

PLAN OF THE OLYMPIC THEATRE.



REFERENCES.

A Box entrance.
B Pit entrance.
C Gallery entrance.
D Entrance to stalls from box entrance.
E Staircase from gallery; and second way out in case of accident.
F A second way out from pit.
G Stage entrance.
H Porter.
I Green-room.
K K Stage.
a a a a Sliders.
b b b b Traps.
L Private boxes.
M Entrance for machinery, &c., to stage.
N Refreshments, W. C., &c.
O Urinal, &c.
P Dock for stowing away scenery.
Q Entrance from manager's house—fire-proof.

We have now to speak of the decorations, which were entrusted to Mr. Aglio, and executed by him and his son, Mr. Aglio, jun.*

The ceiling is divided into four compartments, representing the Seasons,—each compartment being separated by ornamental designs in the Arabesque style, connected in the centre in an ornament giving apparent support to the chandelier. Under each of these four compartments are panels with Arabesque ornaments on gold ground, in the centre being introduced, in *chiaro-scuro*, the sign of the Zodiac marking the entrance of each season. These panels form a band enclosing the circle, and are surrounded by a *bordure*, in *chiaro-scuro*, on blue ground, which connects the two spandrils, formed by the circle closing with the arch of the proscenium. On these spandrils are introduced two groups, allegorical of Music and Poetry.

The front of the gallery and box tiers is divided into seven compartments, by the gilded and bronzed columns supporting the boxes and gallery. Each compartment in the gallery tier is decorated with Arabesque ornaments, within which are introduced masks, musical instruments, and cameos, in *chiaro-scuro*, on gold ground. Those of the box tier are decorated with richly-worked Arabesques, on gold and coloured grounds. A general symmetry is preserved in the decoration of these compartments, but no subject is repeated. *Chiaro-scuro* figures of Cupid, on blue ground, form caryatides over and under the columns of the boxes. Of the general effect when lighted, we have not yet had an opportunity to judge.

The proscenium is intended simply to form a frame to the decorations of the stage,—the predominant colours white and gold. The ornaments of the arch are in *chiaro-scuro*; in the centre of these are represented the Muses, with their appropriate attributes. The upper proscenium boxes are decorated with groups of masks, allusions to Tragedy and Comedy; the lower ones with cameos of poets, on gold ground, surrounded by light-coloured arabesques. The pilasters supporting the arch are decorated with arabesque ornaments, in three divisions; in the centre are introduced the crests of the proprietor of the land, Lord Craven, and of the theatre, Mr. Cavell. In the composition of the caps the artist has introduced the phœnix. The decorations were designed and painted in the short space of seven weeks.

The front of the house is lighted by a large chandelier, manufactured by Mr. Apsley Pellatt. The gas fittings were put up by Mr. J. Palmer, jun., and present several useful precautionary measures, which we will note in our next number.

The entrance front of the building, which is formed in cement, is simple and unpretending. It presents a large cornice with low attic above. There is a series of five windows filled in with iron guards of ornamental pattern, and below is an arcade of five arches, three of which are entrances, and two blanks.

The exact cost of the theatre has not been arrived at, but it is stated by the architect as under 10,000*l.*, including the cost of purchasing some adjoining property. There was not time to obtain competition tenders, and Mr. Holland was employed as the builder at a fixed scale of prices. The work was measured monthly, and 85 per cent. of the work executed paid for on the 1st of each month. The work is very well done, and all parties seem satisfied one with another.

The act drop, partly shown in our view, representing an "Italian loggia opening on a cortile," was painted by Messrs. Dayes and Gordon, and is a very creditable work.

* We hear with regret that Mr. Aglio is suffering from a paralytic seizure, and lies in a very precarious state.

BUILDING SOCIETIES.

The writers who have addressed us in reply to some observations in a recent number of our journal (p. 554 *ante*), all assume as certain a variety of issues, which are more than doubtful. Many who still maintain that these societies, if well managed, would greatly benefit the provident classes, are obliged to admit that the result in practice will be very different in certain cases from what they anticipated.

One well informed correspondent says,—

It seems to me that building societies are founded upon true principles, and are calculated, if well managed, to be of the utmost benefit to the provident classes. But I quite agree with the writer in The Builder, that in practice they have not answered the expectations formed of them, more particularly with reference to the interests of the "working-man." This arises, I believe, principally from bad management. It unfortunately happens that the majority of societies are got up by needy professional men, and, in many cases, from interested motives. Such men have no inducement to bring the operations of the society to an early conclusion, but rather the reverse, as the longer the society lasts the more they make out of it.

Such a state of things operates most prejudicially against societies of an inferior class, as the members are generally working-men, without education, and are consequently entirely led by the managers of the society, whom they trust implicitly, as possessing superior knowledge; and if the trust is abused the society gets saddled with inferior or bad property, which altogether frustrates the objects of the members. With the better class of societies this objection does not apply with so much force,—the members are generally better educated, and capable of looking after their own interests. I think very few building societies will be found to work out in a satisfactory way; and of those who do so the number will be very small of that class to which the "working-man" generally belongs.

J. W.

In several such societies which we have been watching, the solicitors and the surveyors connected with them, have performed their duties so ill, that confusion is inevitable; deeds on which much depended are found valueless, and houses taken as securities are turning out positive mill-stones. The mere recital of some facts within our own knowledge would utterly blast the reputation of three professional men. Not long ago we were requested, as an act of personal friendship, by a director of a building society, to give a confidential opinion as to the value of a property *offered* to them, as he said. It was a house of business in London, held for a long term, at ninety pounds per annum, on a stringent lease, and let to a tenant-at-will for 140*l.* per annum. The premises were not in good repair, the situation declining, and after going over the house our reply was, as many readers will guess, that the assignment of such a property would be *worse than no security at all.* We then learned that it had been valued as an assured income of 30*l.* per annum, for the unexpired term, and accepted by the society for a loan of 500*l.*

The house is now on the hands of the society unlet, and in its present state, we venture to assert, will not command a tenant at the rent the society are bound to pay.

We most seriously urge gentlemen acting as surveyors for such societies, to exercise the greatest care in estimating the value of securi-

ties offered to them, and, knowing the want of judgment which *has* been shown in many cases, and the large interests at stake, we would awaken the attention of Directors to the importance of this point, and exhort them to be assured of competent advice. An immediate *review* of the securities in their hands might be serviceable. We speak with seriousness, because with knowledge.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT an ordinary meeting, held on the 3rd inst., Mr. Bellamy in the chair, the following members were elected:—Messrs. J. B. Bunning, C. R. Cockerell, R.A., G. G. Scott, and W. C. Stow, as Fellows; and Messrs. R. P. Pope, and M. D. Wyatt, as Associates. A paper was then read "On the Ancient Architecture of Scotland," by Mr. R. W. Billings, of which we give an abstract.

At a meeting on the 17th instant, Mr. S. Smirke in the chair, Messrs. R. Hesketh and R. W. Mylne were elected fellows; and Mr. H. H. Burnell, associate. A brief memoir of the late Mr. Pocock, fellow, was communicated. Mr. Donaldson, honorary secretary, then read a paper "On the Manufacture of Glass, and its application to Architectural purposes," to which we shall revert hereafter. In the course of it the lecturer described plate-glass as both cast and *blown*, and alluded to the "rough-plate glass" case, as set forth in THE BUILDER.

Mr. Tite said he thought that speaking of plate-glass as both blown and cast was likely to lead to confusion. He knew nothing of *blown* plate himself, and wished to know where it is now made. Mr. Tite mentioned the introduction of "French and German plate," and the manufacture, by Mr. Chance, of what he called "patent plate," to meet this. When polished, this could scarcely be discriminated from plate-glass proper. It was necessary to call this "patent plate" in specifications, or a different material was furnished. After mentioning the characteristics of glass in various conditions, he said (to maintain his character of *laureate*)—

> "Honour's like the glassy bubble
> Which costs philosophers much trouble!
> The least part cracked the whole doth flie,
> And wits are cracked to find out why."

Mr. Swinburne, as a practical man, said in reply to the question, that *blown* plate was made here before the last speaker was born, and continued in use till six or seven years before the duty was repealed. At one time little could be obtained *but* blown plate.

Mr. Jennings denied that blown glass was plate glass.

Mr. Billings thought that the use of glass and iron ought to have produced a new style of architecture, and that it would have done so but for the folly of Governments.

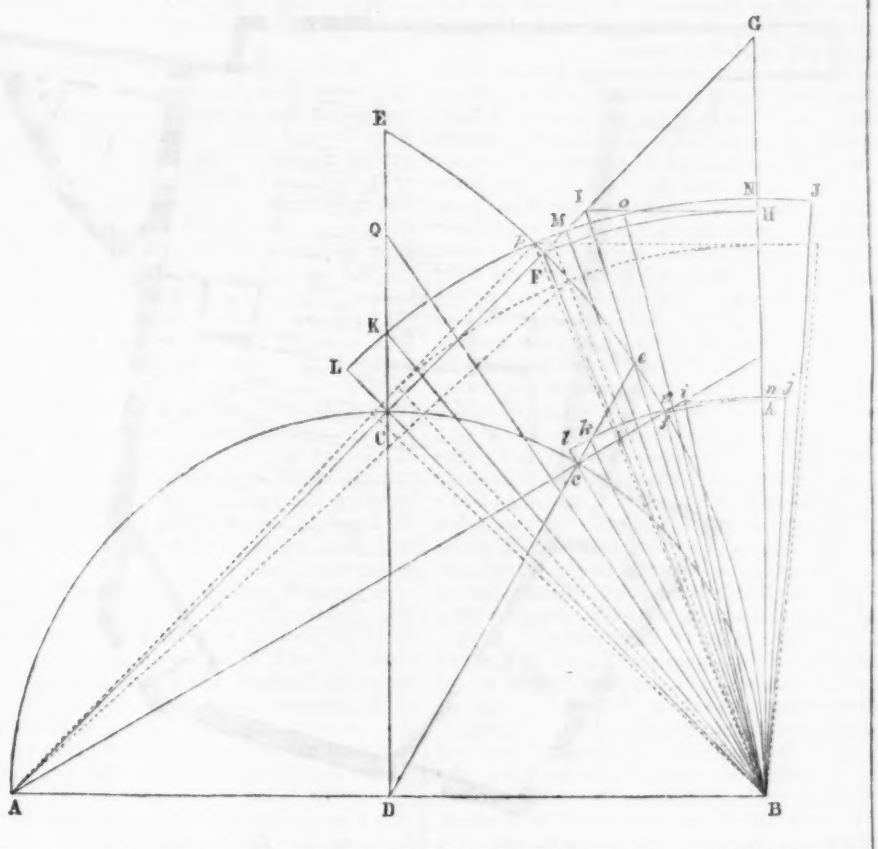
The Chairman alluded to the indestructibility of glass when quite pure, and showed how it corrodes when this is not the case and metallic oxides are present. Some means of ascertaining with certainty the purity of glass were much to be desired.

Mr. C. H. Smith thought it might be useful to mention, that, finding some 1½-inch glass slabs, 5 feet by 4 feet, which were about to be laid in connection with pavement at St. Katherine's Docks, had not a fair edge to make a joint to, he had sought to have them made square by the dealer, and failing in that, had successfully squared them with the chisel in the same way as a piece of marble would be squared. Slabs might be divided by a plain-edged saw.

Mr. G. R. Burnell mentioned, with respect to the size of looking-glasses, that at the late Exposition in Paris a plate was shewn 13 feet 9 inches by 8 feet 8 inches, price 140*l.*; and a concave reflector, 4 feet 7 inches square.

INIGO JONES.—The Shakspeare Society have just now issued an interesting contribution to architectural biography, in the shape of a small volume containing a life of Inigo Jones, by Mr. P. Cunningham, and remarks on some of his sketches for masques by Mr. Planché. The life gives some new and interesting matter, and we shall take an early opportunity to place it prominently before our readers.

A CYCLOMETER.



A CYCLOMETER.

DESCRIBE the semicircle ABC. With radius AB describe the arc BE. Draw the secant DCE at right angles to AB. Draw the secant ACFG, making the arc BF equal to the arc BC. Draw the tangent BG, the chord BC, and the chord BF, bisecting the angle CBG. With radius BF describe the arc FH. Draw HI parallel to AB. Make the angles HBJ and and CBK equal to the angle FBI. With radius BK describe the arc LKMNJ. Draw BM bisecting the angles LBJ, KBN, and FBI. Then BM is to the arc BF as BK is to the arc BC, which is as much as saying that the two equal right lines BM and BK are equal in length to the two equal arcs BF and BC.

Take any other arc of the quadrant, as Bc, proceed as before, and extend B*m*, meeting the arc LJ in *o*, then B*m* : arc B*f* :: B*k* : arc B*c* :: *mo* : arc C*c*.

If a right line B*p* be given, and an arc equal to it in length is required, proceed according to the dotted lines to find the points F and C, taking care that the angle on either side of FB is equal to half the angle on either side of CB, for it is obvious that the construction cannot be true, unless the different angles vary together from greatest to least in a constant ratio either of one to one or of two to one.

It is also evident if we conceive the line BQ to coincide with the chord BC, and BI with the chord BF, and the angles CBQ and FBI to increase together from zero in the ratio of two to one; that since BC is less than BF, and BQ is greater than BI, there can be only two lines (determined by this law) between the limits CB and QB and FB and IB which can be equal to each other, like the arcs BC and BF.

J. P. W.

IMPROVEMENTS IN TUNNELLING.—Mr. Samuel Dunn, of Doncaster, has secured a patent for an improved arrangement for tunnelling under rivers, and other similar purposes. He employs a moveable shield similar to the one used by Mr. Brunel at the Thames Tunnel. The fore part is constructed of iron in the form of a plough, the point being of steel, divided into compartments, which are filled with compressed air, to a degree to equal the outside pressure: the working part is separated from the plough by an air and water-tight partition, fitted with a tube communicating with a pump.

ON THE ANCIENT ARCHITECTURE OF SCOTLAND.

THE following is the substance of Mr. Billings's paper, already mentioned:—

As a preliminary remark it was observed, that although the principal monuments of both England and Scotland may be identical in minute details, yet, at the same time, great changes and varieties occurred in various leading features, so as to produce a distinct individuality in the character of the Scottish edifices.

The beautiful little church of Leuchars, in Fife, by some reputed as of Saxon origin, is a fine Norman specimen, with an apsidal east end. The cathedral at Elgin is a beautiful edifice, and the arcaded streets of that town most interesting, somewhat resembling those of Chester, the arcade, however, being on a level with the street, and constructed of stone. At three miles from Elgin is a curious old fire-proof house, at Coxton, in which the alternate stories are arched, with semi-vaultings, the upper one, however, being pointed. The turrets of Cawdor Castle, near Inverness, are curious, being circular in the lower part and octagonal above.

Mr. Billings considered the first Scotch architectural era to have ranged as in England from 1066 to 1200. The Abbey and Palace of Dunfermline, and the Cathedral of Kirkwall, are gigantic examples of that period, and they bear a striking affinity to Durham Cathedral, the solid cylindrical columns in the two being identical: and history informs us that Malcolm the Third in 1093 assisted in laying the foundation of Durham Cathedral, and soon after his return from that place, founded the Abbey of Dunfermline, the first monks of which were from Canterbury. The smaller Scotch buildings of the Norman period approach nearer in beauty to those of England. Among the most beautiful and perfect specimens are the churches at Leuchars and Dalmeney. An endless variety of detail was presented in Scottish architecture, most remarkable; when not only animals and foliage were introduced, but even the signs of the Zodiac. At the period of the transition to the Early Pointed or Lancet, the mouldings of the Scotch building became so minute, as to excite almost a feeling of pity for the workman who had to accomplish such a task. Some of the capitals at Holyrood chapel are a verification of this,—the quality of the ornament was, however, equal to the quantity. At a later period, the system became the very re-

verse, and more effect was produced without mouldings by the use of the chamfer, the splay of the arch, however, being moulded. The Cathedral of Dunblane is an extraordinary example of the great effect produced by the judicious use of limited means.

Had the ancient friendship between Scotland and England continued to exist, there is little doubt but that the architecture of both would have remained nearly identical; but the complete severance of all friendly ties between the two kingdoms, and the endless feuds among the various clans and even families of Scotland, compelled the lairds to make their houses strongholds of defence, both against their English foes, and the attacks of their own countrymen. This state of things gained for Scotland at least this advantage, that of possessing what no other country can boast of —a complete series of castellated architecture. Not only did the clannish constitution of society in Scotland at this time divide the population into very small parties, but the very disposition of the people was averse to large congregations; this may easily be proved by the small size of the ancient portion of Scotland's capital, and of Stirling,—the approaches being defended by a strong fortress. The political changes of society have, however, gradually had their effect in Scotland, and the application of steam and machinery have almost entirely changed the state of the country in this respect. Ancient mansions have been deserted and dismantled, and detached houses of the lower classes, and many "towns," as they are called, have been allowed to decay and fall.

It is very singular that Scotland does not now possess one recognizable specimen of a Norman castle, although, close to her borders, so many are to be found, such as Norham, Bamborough, Newcastle, and Durham. Yet, that such castles did exist, there can be but little doubt; and the only mode of accounting for their disappearance is the supposition that they were sold by the magistrates as quarries, out of which so many of her abbeys were constructed. So determined seems this desire to have been for the destruction of old castles in Scotland, that Caerlaverock is the only example earlier than 1350, and it still retains its corbelled parapet. Kildrummie, in Aberdeenshire, appears to be the first recognizable Scotch castle, and was built about 1270 or 1300, belonging to the Early English style. One side is exceedingly singular, forming the end of a church with three lancet windows; probably so constructed in the expectation that any attacking force would respect the place of worship. The early Scotch castles appear to date with the time when the Bruces and Baliols left their English castles and occupied Scotch ones.

During the fourteenth and fifteenth centuries there existed a considerable affinity between the Ecclesiastical and the Castellated architectural decorations: thus, the hanging tracery of Rosslyn Chapel and the west front of Holyrood is found in the court-yards of Linlithgow Palace and Stirling Castle. The projecting turrets, so peculiar a feature in Scotch castellated architecture, are wonderfully constructed, many of them being infinitely more massive and weighty than the walls to which they are attached. This is the case at Kirkwall, where the bishop's palace is a fine ecclesiastical fortress residence. This edifice and the abbey of Crossraguel are magnificent specimens. In fact, the latter is a fortified abbey, with all the requirements of a cathedral establishment.

Some of the old castles appear to have been elaborately painted in what has been called fresco: but, from the fact of the paint peeling off, it was evidently never incorporated with the plaister or wood. In their plans the castles varied considerably, and this must be attributed to the most natural of causes, the architects in those days invariably suiting their plan to the nature of the ground on which they were about to build. Caerlaverock Castle may be mentioned as one of the most singular in plan, being triangular, with round towers at two of the angles, and at the third double towers with a gateway between them. This is the only fortress in Scotland retaining a moat: the portcullis room, too, is very complete. Inigo Jones is said to have imitated the plan in Longford House, Wilts, belonging to Lord Radnor. Fivie Castle is another, quite peculiar in plan, and its elevation one of the grandest in Scotland: the centre also is highly illustrative of the Scotch castle of the sixteenth century. The construction of the staircase is well worthy of notice, with its steps 16 feet long.

After the general introduction of gunnery on a large scale, by means of which the reduction of any fortress by a regular investment became only a question of time, the Scotch prudently defended their buildings against attacks by small arms, the only means that flying parties of marauders could have at command. This system was of great importance in developing architecture, for it did not prevent the addition of ornament to the castellated house. The decorated terminations of the massive walls in some of these buildings, form a highly picturesque and pleasing contrast. It was, however, upon the old walls of keep towers that the turrets, windows and roofs of the domestic character are raised; and this will account for the disappearance of many of the old castles. Glammis, Castle Fraser, and others, are striking instances of the extent to which the turreted style prevailed through the kingdom; nearly all the old keeps receiving new tops, some of them being of a highly ornamental character.

In the early part of the fourteenth century was introduced another mixed style, in which the Ecclesiastical and Domestic architecture were combined, as at Dunfermline, where the history of Domestic architecture is carried back to the Norman time; for in the windows of the basement, the bold arches of Malcolm's palace surmount the windows of a later period. As the first to notice this, Mr. Billings recommended its being preserved jealously, as the only known specimen of Domestic architecture in Scotland of the Norman period.

We now pass to the revival of the Italian styles, which, beginning about the year 1580, continued for a full century, producing numberless buildings in a style romantically picturesque, and which bear strong evidence of the architectural ability of that period: indeed, this may be called the flowery period of Scotch architecture. The mansions may be divided into three classes of design:—1st, where the chimney shafts, crow steps, and open parapets appear in combination, as at Wintoun House, near Tranent; 2ndly, where a combination of turrets and square chimney shafts exists, as at Newark; and 3rdly, where the chimneys become quite secondary, the main feature of design being high roofs with dormer windows, crow steps and turrets. Here the court-yard of Heriot's Hospital may be cited as an example. Dalpersie, in Aberdeenshire, is the link between the Castellated and Domestic styles.

The Domestic architecture of Scotland bears evidence of the great attention paid by the architects to details. Thus, the window heads and other ornaments of Heriot's work are a complete school of design; for in that building only one case of repetition occurs in the ornaments surmounting the windows: indeed this edifice, as a colossal example of one date, is unequalled. Two sides of Linlithgow court-yard are of a corresponding style of architecture, the remaining two forming an interesting example of the Domestic architecture of the fifteenth century. In Scotch houses the opposite sides generally present a striking contrast in style: this peculiarity is fully illustrated in an example at Newark, on the Clyde. On the river front of this building, the combination of turrets, jutting staircases, and square chimneys, is prominent; while on the court-yard side not a turret is to be seen, and the dormer window forms the main feature of the elevation. The old keep tower to which these domestic buildings have been attached, alone enables one to recognize the fronts as belonging to the same building.

There is strong reason to believe that the original combination of jutting turrets and corbelled staircases is to be awarded to Scotland alone, in spite of what may be called foreign types. Their conical tops may possibly have arisen from the staircase or recesses called oratories, which frequently occur in street architecture of the Gothic period on the continent, and of which there is a specimen or two also in the Cowgate at Edinburgh. These recesses are invariably supported upon a column, whose capital is bracketed out to the required size; but the corbelled bases of the Scotch turrets belong to the early period of castellated architecture, the variety and quaintness of decoration in their windows and mouldings marking them unmistakeably as Scotch. The general picturesque appearance of the small round turrets so peculiar to Scotland is much heightened by their contrast with the opposite forms of square massive chimney shafts, as may be seen at Newark.

Whosoever formed the school of design, which lasted during the whole of the seventeenth century, deserves the highest credit. Schaw, who rebuilt one of the western towers at Dunfermline, died in 1602; and although the mixture of Italian and Gothic did not predominate until the seventeenth century, yet many of the Aberdeenshire castles bear evidence of its advent towards the end of the sixteenth, and Schaw was most undoubtedly practising successfully at this time. The principal baronial buildings were built, however, after Schaw's death, and generally bear their own dates about 1650.

An interesting fact, discovered by Mr. Billings, proves that Wintoun House, Moray House, the Great Hall at Glammis, and Craigievar Castle, are works of the same architects and builders: nearly all the plaster work of these are cast from the same moulds. As an excellent example of the architecture of the middle of the seventeenth century, when it became the fashion to introduce the Doric, Ionic, and Corinthian orders, surmounting one another, the body of Holyrood Palace may be cited. Although Inigo Jones has always had the credit of designing Heriot's hospital, and his name has been identified with Glammis and with one side of Linlithgow Palace, it is singular that his name never appears on the records of the building, such as contracts or bills giving minute particulars, which are still in existence. There is, however, such a strong affinity between many of that great master's works in London and some of the northern buildings, that in the absence of proof positive to the contrary, they may safely be attributed to his genius.

The elegance and variety of design in the ornamental portions of the buildings of this period must not be passed over in silence; they evince a bold and vigorous determination to accomplish something original, carrying art as far beyond the meagre Italian types as it was possible. Wintoun House may here be mentioned as standing pre-eminent in the quality of its work. The design and execution of all its detail is perfection of the style. The artistic window-heads,—quite distinct from the Italian style, the elaborate geometric foliated ceilings, the chimneys and their stacks, are all equally admirable; presenting together, perhaps, the most impressive specimen of Scotch Domestic architecture. It should be mentioned as being unique among Scotch houses in not possessing corbelled turrets. In Craigievar Castle, in Aberdeenshire, the ceilings throughout are very similar to those at Wintoun, but infinitely more varied among themselves; and even the furniture partakes of the architectural character of the building: it offers a fine example of its time (1620).

Having shown how prominent the details stood in most of the buildings mentioned, it must be observed, that one of the great causes of success in the domestic or baronial architecture of Scotland was the comprehensive study of situation, and the composition of designs to suit these. The jutting turrets, gables, broken forms of detached roofs and surmounting towers, and, in short, all the playfully picturesque forms of Scotch architecture, essentially agree with its landscape, and the fitful forms of its ever-changing clouds; and is as completely in harmony with the country, as are the stately unbroken forms of Greek and Roman temples with the cloudless skies of the countries to which they belong.

After the relinquishment of regular fortification, the Scotch did not give up its external appearances, for stone cannon in hundreds of forms, as gurgoyles, or water-spouts, and more often as mere ornaments, are to be seen upon the more modern castles. In some of the old castles the formidable-looking port-holes are on inspection found incapable of being used for working cannon, from the narrow dimensions of the walled recesses behind, there being barely room to make use of a car-

bine. The picturesque gateway at Linlithgow may be instanced as an example, being almost a sham armament. This innate love for fighting, which the Scotch at all times possessed, induced them to carry out their emblems of strife beyond the buildings in which they secured themselves; even the flower gardens being made to partake of a military character, as at Stirling. After the Reformation had shaken the foundations of ecclesiastical domination in Scotland, it was to castles and houses that the abilities of the architects were turned—and here is the golden age of Scotland's building fame. In other countries the invention of gunpowder put an end to castellated architecture. It is scarcely to be doubted that architecture in Scotland would have become more interesting but for well-defined causes,—the divided power of the monarch and the great feudal lords, and the still more disastrous one, the English interference, beginning with Edward the First.

The variety of triforia in Scotland forms a curious feature, differing from those of England in the varied dimensions of the columns, in which must be recognised a spirit of determination to produce new effects.

The profusion of niches also, and their elaborate details, must be considered as a distinct feature in Scotch architecture. Bishop Kennedy's monument, at St. Andrew's, is one of the most elaborate examples of monumental art in the world.

With regard to the arch in Scotland it cannot, with the exception of a few instances, be considered, as in other countries, an index to the style or date of buildings. The circular arch, only used in Norman architecture elsewhere, was always in general use north of the Tweed. A doorway of a later date than 1400, in the High-street, Edinburgh, the western door and the tower windows of Haddington, the doorway inserted in the semi-Norman wall of Holyrood chapel, are all cases in point; their details proving them to be of a date later than their first appearance would imply. All kinds of arches are common to Scotland, excepting the four-centred, peculiar to the English Perpendicular; the only approach to this style out of England is to be seen in the east end of Stirling Church. It is rather, then, to their foliated detail of capitals, bases, and mouldings that we must look for the type of the time in which Scotch buildings were erected; and by these means the difficulty of distinction ceases. This is a remarkable feature in the Scotch architecture, a tenacity of retaining forms of styles while detail was degenerated. Thus, in Fifeshire, Dairsie Church and Michael Kirk have all the main features of early decorated buildings, and at a distance would be mistaken as belonging to that style, but the detail is decidedly debased in character, and the date upon each confirms the style from 1620 to 1630.

In the same manner that Scotch architects mingled styles, Scotch poetical epitaph-makers adopted mixed languages, thus—

"Here lies the Laird of Lundie,
Sic transit gloria mundi."

"Hic jacet Johannes Spencis,
Qhua biggit this Kirk Yaird Dyke at his ain expences."

England undoubtedly adopted the classical styles more readily than Scotland, and when the orders of architecture once had a hold they retained it, and our own styles became a dead letter. Scotland on the contrary, ever cautious, adopted the orders very charily, and it was not until a comparatively recent date (1660) that the three orders were seen surmounting one another in Holyrood Palace. It is to this position that the Scotch castles and houses owe much of their interest, for the architects of the time only adopted so much of the detail of Italian architecture as left the spirit of their buildings entirely Gothic.

STAINED GLASS, ST. JOHN'S, ANTIGUA.—We are asked to state that Mr. Wilmshurst was the artist who painted the glass in the windows of St. John's, Antigua, not Mr. Willement. Mr. Wilmshurst has recently completed a window for the Foundling Hospital, London. The date of the destruction of the first church at Antigua was misprinted 1848 for 1843.

NOTES IN THE PROVINCES.

THE repairs of the shire hall at Chelmsford are still in progress. The prisoners' cells are completed, and the county room is being painted, repaired, and fitted up with gas.——A committee is in course of formation for the collection of funds towards the restoration of St. Michael's, Cambridge.——St. Martin's Church, Salisbury, was opened on Friday last. A huge mass of pews and unsightly erections has been removed, and the divisions of chancel, choir, and nave, side aisles, &c., disclosed. The debased eastern window has been replaced by one in the style of the chancel, and filled with stained glass. The altar reredos has been emblazoned in gold and colours by Mr. Osmond, jun. The choir has been screened off from the aisles with light and open oak screens, and the organ placed at the end of the north aisle, thus throwing open the western window heretofore blocked up. The body of the church has been much increased in accommodation by low open seats. The extensive stone work restorations have been executed by Mr. Osmond, the carpentry by Mr. R. Hale. Mr. Wyatt was the architect.——An appeal is being made to churchmen on behalf of Frocester Church, now almost in ruins.—— The spire of St. John's Church, Wednesbury, has just been completed: Messrs. Horton the architects, and Mr. Highway, of Walsall, the builder.——The erection of an infant school, in the district of St. Andrew, Birmingham, has been commenced on a site in the Greenlanes. The plans have been furnished by the surveyor of the association, Mr. C. W. Orford, and the contract taken by Mr. Hardwick. The building is intended for two hundred children, with class-rooms, &c. This will make the fifth school erected through the instrumentality of this association, aided by the Privy Council and the National Society.——We understand that it has just been determined upon to build a new Roman Catholic church at Wolverhampton, at the cost of about 10,000*l*. One of the most eligible sites in the town has been fixed upon, and the land, about an acre, purchased, which will be required for the church, presbytery, and schools.—— The west window of Melton Mowbray Church has now been filled with stained glass, by Wales, presented by Mr. T. Clarke and family.——A monument has been erected in the cemetery at Stockport to the memory of Mr. Orrell, a late notable in the borough. The design consists of two bases, a pedestal, pyramid, and cap. Upon the front panel of the pedestal, which is of the Ionic order, is an inscription. The pedestal is surmounted by a frieze and cornice, and on it stands an Egyptian pyramid, 7 feet 4 inches high. On each of the four panels of the pyramid is carved the representation of a lighted torch reversed, and the whole is surmounted by a cap and urn, on the apex of which is another representation of light, typical of the consuming "torch of time." The extreme height of the monument is 17 feet 8 inches, its weight is about ten tons, the pyramid being hewn from a stone weighing at least two tons. The list of the officers and committee who had the superintendence and completion of the work was placed in a cavity in the upper base, under the pedestal. The stone was furnished from the Stypenson quarry, on the estate of Mr. Leigh, at Adlington. The design and execution were by Mr. J. Hough, foreman at the Stypenson quarry. The work-people employed at Travis Brook Mill have thus evinced their respect for the memory of a late employer.——The board of guardians (says the *Bradford Observer*) have not as yet made any selection of the three plans before them, nor have they decided to send them to the Poor-law Board. They have met several times since our last, and have spent much time in examining the details of each,—being very anxious to secure the most eligible.——The new church of St. Matthew, Bank Foot, Bradford, which is in the Decorated style, is of the following dimensions:—Nave, 65 feet by 21 feet 2 inches; aisles, 65 feet by 9 feet 4 inches; chancel, 22 feet by 16 feet; vestry, 10 feet by 8 feet. The contractors were:—Masons: Messrs. Patchett and Co., Queensbead; Joiner and carpenter: Mr. Ives, Shipley; Glaziers: Messrs. Firth, Halifax; Salter Messrs. J. and H. Hill, Bradford; Painter: Mr. Peel, Bradford; Clerk of works: Mr. Mawson. The architects were Messrs. Mallinson and Healey, Bradford. The building will accommodate 490 persons. The east window of chancel and west of nave are filled with Powell's cast and stained glass, and are a gift of Mr. C. Hardy, of Ordsall House. The building is roofed with grey slates, and surmounted with a cruciform bell turret, octagonal above with a small spirlet, terminating in a weather vane-cock as an emblem of watchfulness in the house of prayer.——The foundation-stone of Captain Cook's memorial school was laid at Marton, in Cleveland, near Middlesborough, Yorkshire, on 29th ultimo. The contractor (for the foundations at least) is Mr. Matthew Bowser, of Stockton-on-Tees. The building will not be proceeded with till spring of next year. In this little village, which boasts of the great captain as a native, two other considerable improvements have of late been effected, namely, an extension of its Norman Church into cruciform restoration, under the management of Mr. J. B. Rudd, and with the advice of Mr. Carpenter, architect, and an enlargement of the vicarage house, on a plan furnished by Mr. C. Brodrick, of Hull, architect.——We regret to state that Mr. G. T. Page, civil engineer, acting at the dock improvements at Leith, under Mr. Rendall, met with an accident on Thursday week, while inspecting the inner dock wall, and died in a few hours, after falling 20 feet, and fracturing his skull.——The legatees of the late Sir Gabriel Wood have paid the sum of 38,000*l*. to trustees for the erection and endowment of a hospital for decayed shipmasters of Greenock and its vicinity.

THE ROYAL ACADEMY MEDAL DRAWINGS.

DISPOSED as I am to agree with "Kunops" in his deprecation of copyism in architecture, I think it was somewhat ungracious and ungenerous in him to found his remarks upon the distribution of the prizes at the Royal Academy, and to leave it to be inferred that none of those who obtained medals had shown more than very ordinary common-place ideas. However objectionable the system adopted by the Academy for the annual *concours* among the students may be, it is what the students cannot correct; and, quite sure I am, that had any one aimed at striking and determined originality in the department of architecture, he would have deprived himself of even the chance of obtaining a medal; for his design would have been put *hors du combat* at once, as being altogether *non-descript*, fanciful, and capricious.

Quite unreasonable is it to look for sterling originality—and unless it be such it is hardly worth having—from those who are comparatively mere novices and beginners in their art. For talent of that kind we ought to look not to *students* but to *masters*—to those whose *status* in the profession invests them with a certain degree of authority in the opinion of the public, and whose practice supplies them with opportunities of putting forth fresh ideas far more effectively than upon paper.

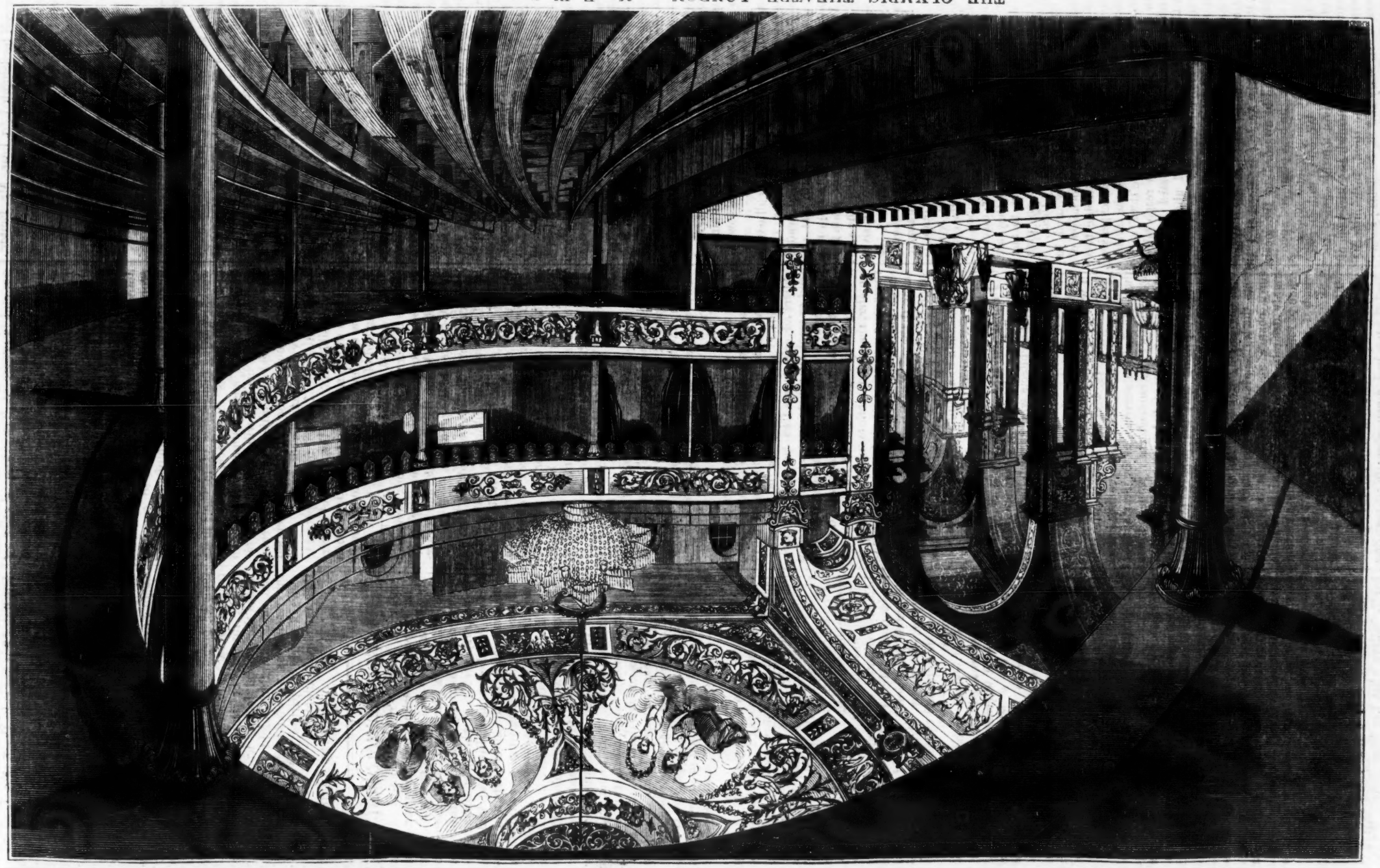
All that can fairly be expected from students competing for the academy medals is such indication of talent as promises well for their future career; and, in my opinion, the architectural design which has this year obtained the gold medal decidedly makes such promise, and that very forcibly. The general composition shows more than ordinary artistic feeling; it is equally noble and picturesque; nor is it deficient in new ideas, for the mode in which sculpture is introduced, where it would show itself distinctly to the eye, is one which, obvious as it is, has not yet been practised. Much ingenious contrivance is also shown in the arrangement of the interior, and in the manner of admitting light into the rooms of the lower floor, without showing any windows there externally.

Those who cannot perceive any thing particularly noticeable or praiseworthy in that design must be quite at a loss to discern any merit—I will not say in the British Museum, but in the Assize Courts at Liverpool, or, in fact, in any of the modern examples of the classical style.

ZETA.

THE OLYMPIC THEATRE, LONDON.—Mr. F. W. Bersill, Architect.

[See page 601.



ADVERTISED COMPETITIONS.

STOCKTON UNION—DRAINAGE OF TOWNS.

You will be delighted to hear, Mr. Editor, that your remarks in this matter have not been without effect: the Stockton guardians have amended their offer, and here it is:—

TO ARCHITECTS.

COMPETITION!!!

The committee are desirous of receiving designs: to the author of the one they shall consider first in merit, a premium of

TEN POUNDS!

will be given, with the option of acting as clerk of the works! To the second in point of merit they will present

A SUIT OF NEW CLOTHES!!

and the third and fourth will be allowed to contend by climbing a well-greased pole * for the prize of

A LARGE LEG OF MUTTON!!!

This you will admit is far more likely to attract the eye than the one they have chosen.

But, Sir, leaving them and their fellows to the contempt they deserve, is it not high time that architects should endeavour to check such proceedings as these? Already have your pages been chosen as the medium for putting forth suggestions for an organization of the profession; and I am sorry that the matter has not yet taken shape, as I think some measure of the kind must be adopted to secure fairness in this, the surest, if not the only way of raising the architectural reputation of this country,—the only way for success to the young architect without influence. Should success be accorded to any movement that may be made, it is to you, Sir, that our warmest thanks will be due for your advocacy of justice, and condemnation of unfairness in these proceedings, and for the uniform interest you have taken in the subject. Q.

Sir,—In your useful publication of the 8th instant, I was very pleased to observe a letter, headed "Competitions advertised last week," descanting upon the paltry remuneration offered to the *successful* candidate as architect.

Pray continue to draw public attention to the manner, so little likely to produce beneficial or efficient results, in which in several cases the important subject of the "drainage and sanitary improvement of provincial towns" is conducted by the local authorities.

Two examples will be sufficient to illustrate my meaning. In your paper of the 11th August last, an advertisement appeared, headed "Chippenham, Wilts," setting forth that the Commissioners of the Chippenham Improvement Act required a plan and report upon the best mode of draining the town, and the efficient discharge of such drainage into the river Avon; such plan and report to specify the courses and levels at which such drains should be made, and how far the existing drainage may be available; and they will pay a competition premium of 20*l.* for the plan and report they deem the best. It further states the commissioners are to be at liberty to act upon the plan and report approved of, at their discretion, without further payment; but they are not liable to any expense, or subject to any charge whatever, in connection with any plan or report not adopted or approved by them.

To this tempting offer I endeavoured to respond, by trying to form an association of professional men who should contribute two guineas each, towards the preliminary expenses of procuring the map and taking the levels, but even that small sum was more than (with the exception of about three) any respectable engineer or surveyor would hazard in the undertaking, and consequently I abandoned the proposition.

The second specimen, to which I would draw your attention, appeared in your paper of the 27th October, under the heading "Warwick Public Health Act." It states that a premium of 50*l.* will be awarded by the local board of health, for the best plans and specifications for the entire draining and supply of water for the town of Warwick, with an estimate of the probable cost of the same: persons competing are to furnish an entire plan of the several streets of the town, including the parishes of St. Mary and St. Nicholas; showing the direction of all intended pipes and drains, with the sizes, sections, and all other necessary details, and are to prepare sections of the several levels, and proposals for flushing the sewers, carrying off all waste water, and trapping drains; also the best method of forming the sewers and collecting the sewage manure. The whole to show a scheme of perfect drainage and an abundant supply of water. The approved plans to become the property of the corporation, on the premium being awarded and paid.

Surely, Sir, the attention of these local authorities and the public needs only to be properly directed to the subject, to convince them that no professional man of any respectability or standing would, or ought to be expected to, undertake so great an amount of work, requiring many years of previous practical and laborious experience, and present devotion of time and pecuniary outlay, upon the *chance* that his plan will be considered *the best* by the local authorities, and in that case, and in that only, to be scantily remunerated by the paltry premium offered.

But, on the other hand, it must be patent to every sensible man, that this class of advertisements will be responded to by a description of persons of whom a number are to be found at the fag end of every profession, whose only hope of success is, the certainty that, in the absence of more skilful competitors, some plan must be pronounced the best, however inefficient it may be for the purpose, and consequently entitled to the premium.

Since writing the above, another instance, more ludicrous than either of the two mentioned, has just been pointed out to me, in your paper of the 24th November, headed, "*St. Thomas the Apostle, Devon*," offering a premium of twenty guineas for the best, and five guineas for the second best design for draining that district,—the map exhibiting which is to be drawn on a scale prescribed by the General Board of Health in London. This scale, being about 40 feet to the inch, very frequently, in the case of towns of any size, requires mounted paper of the value of 4*l.* or 5*l.* to plot the map on, to say nothing of the drawing table and office, which are indispensably necessary to the accurate construction of the map. E. Ryde.

Can we be surprised at such offers as these from parties who know little or nothing of the skill and attainments required by an architect or engineer, and who daily see in the newspapers advertisements from persons who pretend to teach the whole science and practice of engineering, architecture, surveying, and a host of qualifications, in the space of six weeks, and for the sum of 10*l.*? Can we wonder, then, that while such emanations as these are constantly before our eyes, attainments should be thought so little of? Although by many these are appreciated at their true value, yet in the eyes of some, and as appears not a few, they will have the effect of bringing down the profession to a ruinously low standard?

Alpha.

In the remarks made by your various correspondents relative to the conduct of those *soi-disant* architects who compete for 10*l.* premiums, and advertise their services on the *most reasonable terms*, one class has been overlooked, *i. e.* those who injure their professional brethren (if we may admit the term), by designing for builder architects, who, not satisfied with the profits arising from their own calling, avail themselves of the services of the class alluded to for further aggrandizement. You may not perhaps be aware of the extent to which this system is carried in country towns; and it is to me surprising that the parties employing these builder architects cannot see the net into which they must inevitably fall. Verily, what with engineering architects, and builder architects, the legitimate professional man has but a sorry chance in these days. It is, indeed, highly desirable that some effort should be made to raise the profession to that position which it is fully entitled to occupy in society, and, at the same time, to put an end to that degrading system of competition which is now practised.

As a constant reader of your excellent periodical, I have had much pleasure in perusing the letters of those gentlemen who have addressed themselves to the subjects above named; but there has been in all cases one fatal omission. Nothing, in these times, can be done without money. Let those who are anxious for the welldoing of the profession not only unite, but put their hands in their pockets, and subscribe towards obtaining the desired objects. There is always a difficulty in commencing an agitation of this kind. My plan would be simply this:—Let a subscription be entered into, a room in some central situation obtained, a *provisional* committee organized; let circulars be addressed to all members of the profession, calling their attention to the existing evils, and public meetings beadvertised simultaneously in London, Birmingham, Liverpool, and York, or any other towns that may be thought preferable; let a series of resolutions be prepared and also circulated, with a request to each architect to express his approval, dissent, or amendment. By these means the general feeling would be obtained, and such alterations might then be made in the resolutions as would tend to meet the views of nearly all parties, and thereby ensure their unanimous adoption.

A Country Architect.

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* Fit emblem of a competition!

BRITISH ARCHÆOLOGICAL ASSOCIATION.

At a public meeting on December 14th, Mr. Pettigrew, V.P., in the chair, a paper from Mr. Joseph Clarke was read, giving an account of the discovery of Roman remains, on the property of Mr. Stephens, at Upham, between Winchester and Bishop's Waltham, consisting chiefly of the lower parts and foundations of walls, occupying a considerable space, the length in one direction being 120 feet. There is reason to believe that these are the remains of habitations, as coloured plaster was found adhering to the walls in many places. In a passage which was cleared to a considerable distance, were found fragments of coarse pottery, and other evidences of Roman occupation, but in no part of the space any trace of Samian ware. In the enclosures slabs of stone, of a hexagonal shape, were discovered, and from their shape, and the discovery of nails still remaining in some of them, they are supposed to have been used for roofing.

Mr. Planché read a very elaborate paper on the tilting helmet, tracing its history from the pointed and rude defence used by the Normans, through the many cylindrical and allied forms of the succeeding period, to the more elegant kind in use, during the fifteenth and sixteenth centuries, and well known in the heraldic devices of that and succeeding times. Allusion was made to several kinds of these helmets exhibited at former meetings of the association. Mr. Planché's remarks were illustrated by a long series of well-executed diagrams, drawn by Mr. C. Baily; also by plates of monumental effigies, and other standard works.

Mr. G. Wright produced some rubbings of a crowned M, and curious collar, having upon it alternately a rose, and what appears to be a letter r,—existing in an old vault, beneath Belvoir Castle, the seat of the Duke of Rutland. Mr. Planché considered the M to be placed there as the initial letter of Manners, and the r that of Roos, both of which names belonged to the families of the Earls of Rutland.

BEDFORDSHIRE—CHURCH PROGRESS.

Woburn.—The alterations here, though not all that could be wished, are improvements. The pulpit and reading pew have been removed from the very singular position they occupied, and placed in their right situations. The pews, alas! though lowered, are pens still. It is said the fastidious taste of the congregation would not hear of open sittings, though we have reason to believe that this improvement, as well as what has been effected, would have been at the expense of the noble Duke in whom the presentation is vested.

Cranfield.—The restoration here is on a bold and liberal scale; those who knew the church in its miserable state a few years ago, will hardly believe what has been done. We believe, also, that almost all has been at the expense of the reverend incumbent and his friends. No calf pens here; and painted glass

[See page 601.

THE OLYMPIC THEATRE, LONDON.—MR. F. W. BUSHILL, ARCHITECT.

has been contributed in a very handsome manner. Your readers should see it, especially country churchwardens.

Eversholt.—A very little step indeed has been taken here; the roof of one aisle has been soundly restored; why the reparation of the other was not carried out equally well we cannot explain. A crazy deal painted pulpit stuck against one of the columns has been happily removed. But the tub that has been placed nearly in its proper site is most awful, its size preposterous, and manufactured from some old mahogany, which, with its Pagan ornaments, once disfigured the east end of the chancel, which last is unhappily clogged up with some recently erected miserable closed sittings, for which there was no necessity,—owing to the difficulty with the occupants of some intrusive pews. The pulpit and reading desk, though greatly improved from their last position, are yet incorrectly located. But worse than all is an innovation on the open sittings of the humble part of the congregation, by the churchwardens appropriating two portions, and enclosing them with doors, for the gratification of private parties: it is hoped that the Archdeacon, when he comes, will "visit" them for this outrage. On cleaning the walls of Eversholt Church a mural painting was brought to light, representing St. Peter ushering into the realms of the blessed departed spirits. The churchwardens covered it up with eager haste, but fortunately a tracing of the same size was obtained, and has been preserved.

Tingrith.—By the noble spirit of the ladies of the manor and owners of the property in the village, the church has been restored in a good way. Thus you see, Sir, improvement, desperately required, is creeping on in this county.

M.

ANCIENT MORTAR.

In reply to the inquiry of "A. G." in your last number, I will observe that ἄσβεστος, in technical Greek, means *unslacked lime*; and I conceive it most probable that such is its meaning in the passage quoted.

Cambridge. W. W.

In reply to your correspondent, "A. G.'s" question, about the meaning of the terms ἄσβεστος and ὀστρακον, which are used to signify the component parts of an ancient mortar, I beg to state that the former signifies "quick lime" and the latter "pounded earthenware," two very probable materials to be mixed up in a cement, which is more than can be said of the substance now known as "asbestos." That ὀστρακον is "earthenware," and not "pounded shell," as suggested by your correspondent, is probable, first, because such is the most common signification of the word, and secondly, because we know that the ancients used earthenware (burnt earth) as an ingredient in cement. Vitruvius says (I quote Gwilt's translation), that "if to river or sea-sand potsherds ground and passed through a sieve in the proportion of one-third part, be added, the mortar will be better for use. Pavement made of this material was called ὀστρακοκονια, and by the Latins *purimentum testaceum*. Any of your readers can satisfy themselves that the meanings given above are correct by looking out the words in Liddell and Scott's lexicon, so that, taking it for granted that "A. G.'s" translation is correct in other respects, the mortar in question was compounded of lime, pounded earthenware, and elm bark, mixed with hot water in which barley has been boiled, and it only remains for some of your practical readers to make a barley cake (μαζα) of this description, and see whether or not it causes stones to stick together with the strength of iron.

A. M. C.

Scarborough Independent Chapel Competition.—This was not an open competition; but a limited number of architects were selected as competitors. The plans were sent in on the 1st December, and Mr. Raffles Brown has been declared the successful architect. A correspondent, Mr. John Petch, states to us that he was expressly informed the names of competitors were to be in sealed letters, and yet that the selected design was signed by the architect and accompanied by testimonials.

THE CRYSTAL CURTAIN AT DRURY-LANE THEATRE.

The interior of old Drury was brilliantly fitted by Mr. Frederick Gye for Jullien's masked ball. The circle of chandeliers low down and beyond the central light, and the garlands of flowers suspended by butterflies, which filled the upper part of the house, produced a charming effect. What we have to notice, however, as new in decoration, and it is scarcely possible to go any where without finding something which may be usefully mentioned to our readers, is the "crystal curtain," as it was called, which fringed the upper part of the proscenium. This was formed wholly of chandelier drops, or spangles, with gas in devices behind, and when we mention that its width was 42 feet, and that it descended 16 feet at the sides and 11 feet in the middle; it will be seen that it must have swallowed up an enormous number of them. The ground-work took as nearly as possible 100 to the square foot, but adding the drapery, lines, tassels, &c., which were formed by other layers on the surface, and then the fringe, which was represented by a quantity of "lobs" as they are called, commonly used to surround wax-light lustres for chimney-pieces, the number cannot have been less than 80,000.

It seems that Mr. Gye obtained the greater number of them from Bohemia—finding they could be had cheaply there—without any precise intention, but simply with the idea that by different arrangements they might be made useful in decoration, and this was his first and very successful attempt with them.

NEW WESLEYAN CHAPEL, LIVERPOOL-ROAD, LONDON.

The chapel is erected on the angle of ground at the Islington end of the Liverpool-road, and consists, on the basement floor, of a morning chapel, 75 feet by 35 feet, and seven vestries. The whole of the ground floor of the chapel is fitted up with pews and free seats, side aisles, and communion, which, together with the side and end galleries, will accommodate 1,500 persons. The chapel measures 90 feet long by 54 feet wide. The height from floor to apex of roof is 50 feet, and the height from outside ground line to top of turret on front gable is 76 feet. We have not yet seen the building, but a correspondent has handed to us the following particulars.

The chapel is designed in the decorated style of Gothic architecture. The centre of the west front is occupied by a recessed and moulded doorway, beneath a large window, filled in its upper compartments with flowing tracery; buttresses divide the centre from the wings of this elevation, which contain a centre window, and are flanked by double angle buttresses. In the sides of the chapel are five windows, occupying spaces of equal width between buttresses; a clerestory, having the same number of windows, the walls of which, with those of the side aisles, are surmounted with a parapet pierced with trefoils and quatrefoils. The clerestory is supported by arches springing from octangular columns, with foliated capitals, over which are inserted carved corbels, from whence spring the curved ribs of the roof, with carved spandrils supporting the principal rafters. The timbers of roof are moulded on the underside and stained.

At the south-east angle of the building an octangular turret is attached, the lower portion of which serves as a staircase to side gallery, and the upper part is occupied by flues, which carry off the vitiated air from all parts of the building, the warm air being supplied from the circulation of hot water in pipes laid in the basement, and conveyed by a warm air culvert to the open space under the pew floors. Openings are made in the upright face of the steps to the pews, and covered with gauze wire, which allows the warm air to disseminate itself throughout the building. An entrance for cold air communicates with the apparatus in the basement, so that in summer it may be admitted through the same channels as the warm. Openings are left in the inner soffit of the roof, to give the vitiated air access to the space between it and the slate surface, which space is in immediate connection with the ventilating tower, containing a fire-place, that will be put in use when the peculiar state of the atmosphere needs its assistance to cause the required current of air. The walls of the chapel are built of Kentish rag-stone; and the ashlar and carvings are executed in Bath stone. Its entire cost is stated to be about 6,000*l*. It was erected from the designs of Mr. James Wilson.

BANK ARCHITECTURE.*

The proper situation of a bank is a matter of some importance. It should be situated in what is deemed the most respectable part of the town. If it be placed in an inferior locality, approachable only by narrow and disagreeable streets, and surrounded by buildings the seats of smoky and dirty trades, it is not likely to be so much frequented, nor to acquire so large a business, as though it were more pleasantly situated. Another point to be observed is, that the bank itself should be a handsome building. The necessary expenditure for this purpose is no sin against economy: it is an outlay of capital to be repaid by the profits of the business that will thus be acquired. A portion of the building will probably be set apart for the private residence of the manager, or of some other officer of the establishment: it is desirable that this portion should be entirely separated from the office. The communication should be only by a single door, of which the manager should keep the key. The building should be so constructed that what is going on in the private house, whether in the kitchen, or the nursery, or the drawing-room, should not be heard in the bank. The office being thus isolated must then be fitted up in the way that will most effectually promote the end in view; and here are three points to be considered—*space*, *light*, and *ventilation*.

A chief consideration is *space*. A banker should take care that his clerks have room enough to do their work comfortably. Every accountant knows that he can often work faster if he can have two or more books open at the same time; but if his space be so confined that he must shut up one book and put it away before he can use another, he will get on more slowly. The cashiers, too, will be much impeded if they are obliged to stand too close to each other, and the public will be huddled together, and will often count incorrectly the money given to them, and thus take up the cashier's time to make them right. Want of space will necessarily occasion errors, from the confusion it produces, and from one clerk being liable to interruption from the noise or vicinity of the others. A banker should therefore take care that his office is large enough for his business, and that it will admit of being enlarged in case his business should increase. Ample space is also conducive to the health of the clerks, as there will be more air to breathe, and the atmosphere is less likely to become polluted by the burning of lamps and candles.

Another consideration is *light*. It is well known in every London bank, that fewer mistakes are made by the clerks in summer than in winter. Abundance of light prevents mistakes, and saves all the time that would be employed in the discovery of errors. Light is also of great importance to the cashiers in detecting forged signatures and bad or counterfeit money. Thieves are also less likely to attempt their robberies in a light office than in a dark one. Faint or illegible handwriting can be more easily read, and hence mistakes are less likely to occur. The clerks, too, perform their duties with more quickness and cheerfulness; the gloominess of an office throws a gloom over the mind, but "light is sweet, and a pleasant thing it is for the eyes to behold the sun." The lightest part of the office should be devoted to the clerks. We have observed sometimes a violation of this principle. The entrance door has been placed in the middle of the front, with a window on each side, and the counter thrown across the room, so that the lightest part of the office has been given to the public. It is better that the entrance be placed at the right or left corner, and the counter be made to run from the window to the opposite wall; the light will thus fall lengthways on the counter, and the space behind the counter will be occupied by the clerks.

* From "Gilbart's Practical Treatise on Banking."

Ventilation.—Volumes have been written by medical men upon the advantages of fresh air, and on the unwholesome atmosphere of crowded cities. If the air that circulates in the streets of towns and cities be impure, what must be the state of those offices or rooms where twenty or thirty persons are breathing close together during the whole of the day, and gas lights are burning during the evening? In such cases we are told that a person afflicted with consumption of the lungs may communicate the complaint to others, as they must inhale a portion of the atmosphere which he has breathed out. The air in a close office is not only rendered impure by the number of people that breathe it and by the burning of gas, but it also contains very frequently particles of dust arising from the floor, through the number of people constantly walking in and out. It is almost impossible for persons so circumstanced to enjoy for a length of time even moderate health. A portion of this evil may be mitigated by a good system of ventilation. To obtain this should be regarded as an object of the first importance. If a banker do not insist upon the architect performing this in the most effectual manner, he must be content to be often put to inconvenience through the illness and consequent absence of his clerks.

ARTISANS' HOME, &c.

THE interest I feel in all that relates to the "Artisans' Home" (described and commented upon in your leader of Dec. 15), induces me to offer an idea or two as to a mode of decorating the interior of establishments of this nature, so that they might prove to be, at the same time, highly useful to all those protected under their walls, whose minds may have a tendency to artistic pursuits. In addition to the reading-room and library, but appertaining thereto, I would appropriate a well-lighted and well-ventilated room for the benefit of those individuals. Towards the upper part of the walls, and at proper distances for observation, I would place a few good casts of figures, some on revolving pedestals, their contours being relieved by a light blue coloured ground. I would also have cheap but well-executed human or other compositions or single forms, painted in *chiaro-scuro*. The lower division of the walls should be stuccoed white, with a trowelled surface (to admit of the charcoal delineations being easily effaced by a sponge), affording ample space whereon the artisan might practice, and exercise his hand and eye in drawing, whether in copying the models before him, or designing from his own fancy. The addition of this studio to the artisan's home would be a great improvement, combining with the comforts of a lodging-house the advantages of a school of design. Real, although undeveloped talent, thus exercised, would reward the operative, giving him a greater power over the materials on which he worked, and whilst it shed refinement over him and his labours, it would reflect honour upon the nation.

The task would of course be one entirely undertaken from a pure love for art, fostered by a desire on his part to raise himself to eminence. The experiment (not an expensive one) I think worth a trial, on account of the degree of emulation it might safely be predicted it would create amongst labouring men, designers of patterns, ornamentists, whom we might discover more or less belonged to the inventive race,—men, at all events, actuated with the wish not only fully to carry out, but to improve, and add a grace to, the conceptions of others,—to give satisfaction to their employers,—to deserve, by superior talents, if they cannot command, higher wages,—and to qualify themselves to become one day efficient masters and employers. F. LUSH.

PUBLIC RIGHTS AND PUBLIC HEALTH.—The "North London Anti-Enclosure and Social and Sanitary Improvement Society," are moving again in their useful work. Efforts are being made to establish "A Primrose Hill Park Library," on a respectable scale, and make other arrangements conducive to the interests of the society, which is henceforth to hold its meetings regularly on the evening of the first Monday of every month, at the Primrose Tavern, Hampstead.

Miscellanea.

INSTITUTION OF CIVIL ENGINEERS.—The annual general meeting of the Institution was held on Tuesday evening, December 18th (Mr. Field in the chair), when Mr. W. Cubitt, C.E., was elected president. Messrs. Brunel, Rendel, Simpson, and R. Stephenson, M.P., vice-presidents; J. F. Bateman, G. P. Bidder, J. Cubitt, J. E. Errington, J. Fowler, C. H. Gregory, J. Locke, M.P., I. R. M'Clean, C. May, and J. Miller, members; and J. Baxendale and L. Cubitt, associates of council. The report of the council, which was read, alluded to the past season of unexampled depression in the engineering world, but at the same time held out hopes of improvement, on account of the agitation of the subjects of better supplies of water and gas, the sewerage and drainage of towns, the construction of abattoirs, and other sanitary questions; whilst the improvement of canals, in their struggle with the railways for the heavy traffic, the construction and amelioration of harbours, the embanking and improving of rivers, the recovery of marsh-lands from the sea, and numerous other works, which had been neglected on account of the more attractive railways, would resume their former importance, and eventually afford ample employment for the majority of the members of the profession. Telford medals were presented to Lieut.-Colonel Harry D. Jones, R.E., Mr. R. B. Dockray, and Mr. J. T. Harrison; Council premiums of books to Messrs. J. T. Harrison and J. Richardson; and Telford premiums of books to Messrs. R. B. Grantham, T. R. Crampton, W. Brown, and C. B. Mansfield.

RATING OF EXETER HALL.—An appeal against an increase of charge by the parish of St. Martin's-in-the-Fields, for poor rates, from the annual rateable value of 1,500*l.* to 2,500*l.*, on the ground of the Wednesday Concert success, was heard at the Middlesex Sessions on 11th inst. Mr. Bodkin, for the appellants, stated that the proprietors of the hall were limited by their deed to the receipt of 5 per cent. on their shares, but that they had never yet reached even that. Last year the rate had been already increased, on, from 1,000*l.*, the annual rated value for seven years, to 1,500*l.*, on the ground of a little success in more frequent letting; and dread of law expense alone, he said, prevented resistance even to that increase. The rateable value has since been suddenly raised to 2,500*l.*, whereas even the *gross* revenue for the last three years had averaged only 3,382*l.*, from which must be deducted 211*l.*, on which Messrs. Daukes and Co. must pay rates. Other deductions, such as 204*l.* for gas, 150*l.* for repairs, &c., left only 2,144*l.*, from which further deductions for interest on expenditure in moveable stock, depreciations, &c., must be made, leaving 964*l.* only as the absolute rateable value. The judge decided that 2,000*l.* be the rateable value. His lordship expressed a doubt whether concerts were within the provisions of the deed of proprietorship, though education in musical science, with musical illustration, clearly was. In course of the discussion, evidence was given that the receipts had amounted in the year ending April, 1842, to 3,284*l.* odd; April, 1843, to 4,241*l.* odd; April, 1844, to 3,016*l.* odd; April, 1845, to 2,908*l.* odd; April, 1846, to 2,598*l.* odd; April, 1847, to 3,018*l.* odd; April, 1848, to 2,947*l.* odd; April, 1849, to 4,181*l.* odd.

SOHO PARK, BIRMINGHAM.—In your last paper you justly remark that the Soho Park "might be made one of the most beautiful places in England;" but, alas! the great idea in laying it out appears to have been ground rent, and a number of ill-built and ill-arranged houses have sprung up, very much to the disfigurement of what was once the most beautiful entrance into Birmingham. One portion, let to a man who, I understand, is subletting, is completely denuded of trees. On public points I think it but right you should have all practicable information: let this idea be my excuse. N.

*** We are quite aware that an error was committed at starting, land being let without the retention of sufficient control; but the management of this property is now placed in other hands, who appear to have made up their minds to conserve carefully the beauties of the place, and allow none but good houses to be built on the land.

PROJECTED WORKS.—Advertisements have been issued for tenders by 10th January, 1850, for the rebuilding and enlargement of New Castle Church, Glamorganshire; by 5th January, 1850, for the construction of a tank, filter beds, filter tunnels, service reservoir, and other works, for the Derby Water Works Company; by a date not specified, for the erection of a small block of farm buildings near Southampton; by 28th inst., for carpenters', slaters', and bricklayers' works for St. Marylebone guardians; by 27th inst., for a supply of soft melting iron for the navy, and by same date, for 350 tons of English tough cake copper for Chatham dockyard; and by 27th inst., for the construction of buildings required for the Great Western station at Banbury, and at the minor stations on the Oxford and Rugby line of railway, also for the construction of a goods shed at Thatcham, on the Berks and Hants line—separate tenders.

SIR MARC ISAMBARD BRUNEL.—This able and distinguished engineer expired on the 12th inst., at his house in St. James's-park, in the 81st year of his age. Though by birth a Frenchman, of Norman descent, his life has almost wholly been spent in England, to which he came from the United States, where he had emigrated at the height of the first French Revolution, in 1792, being Royalist in principle and in danger of his life. He was concerned in setting up the block-making machinery which has ever since been in active operation at Portsmouth for naval purposes. He was the inventor of the circular veneering saw, also still in use the same as ever. To him the manufacturing world is indebted for the elegant little machine for winding cotton thread into balls, which has so greatly extended its consumption. He invented machinery for shoemaking for the army. But the great work of the elder Brunel was the realization of the Thames Tunnel, an arduous work, with the accomplishment of which, in 1843, after nineteen years of perseverance in the midst of difficulties and reverses, his energies were literally exhausted in the advent of incipient paralysis. His work was done. He may be said to have since remained with us only to contemplate and to assure himself of the permanency of the results of his several labours. Sir M. I. Brunel will ever hold a high place amongst the engineers of England. And his geniu shas been long fully appreciated. During Lord Melbourne's administration he received the honour of knighthood. He was voted a vice-president of the Royal Society, a corresponding member of the Institute of France, and a vice-president of the Institution of Civil Engineers. He was also made a chevalier of the French Legion of Honour: so that he has died full of honours as of years.

OXFORD ARCHITECTURAL SOCIETY.—At a meeting of this society, held on the 28th ult., the report was read by Mr. Portal, B.A., secretary, which stated that since the last meeting an application had been made by Mr. Floke, P.P., of Plymstock, near Plymouth, *for a design for stalls*, which he proposed to place in his chancel. A pen and ink sketch of a stall had been forwarded to him by Mr. Wilmot, secretary, and also one of the society's sheets of bench ends, by the aid of which it was hoped he would be able to carry out his plan. Surely this is a step out of the province of the society. Mr. Portal then read a paper "On the use of screens in churches."

LEAD-SHOT TOWERS.—Mr. D. Smith, of New York, lead manufacturer, claims for patent the application of an ascending artificial current of air to a descending current of metal in the manufacture of leaden shot. This he proposes to effect by employing a tower shaped at top like a funnel and at bottom like a truncated cone, with an annular hollow vessel resting on a reservoir of water at the bottom. The annular pouring vessel is to be perforated with holes at top, through which an artificial current of air is to be forced up the tower by a fan or other blowing machine. The metal falls through the hollow centre of the annular vessel into the water reservoir, which is furnished with a shoot to conduct the metal to a suitable receptable. Or, the artificial current may be created by exhausting from the top of the tower, and allowing the air to flow in at bottom, in which case the hollow annular vessel will be dispensed with.

Gas.—A tremendous explosion took place at the Sheffield workhouse, on Saturday last, with extensive damage to the building throughout. Some account of the origin of the accident, as described in the local *Times*, may be instructive, from the warning it conveys. The committee room is lighted by a sliding pendant attached to the ceiling. The vertical tube is filled with water to prevent escape of gas, and ought to be kept full, otherwise when drawn down there is an escape of gas. The office cleaner, when she lighted the gas, drew this pendant quite down, and, the water being deficient, the consequence was a copious escape of gas, which accumulated at the top of the room till it reached the gaslight below, and then exploded. The climax was most probably expedited by the admission of atmospheric air at the moment, the woman having just opened the room door. The best mode of detecting a deficiency of water in a sliding pendant is, once every three months or so to draw the slide quite down. A bubbling noise occasioned by the air in the lower part of the tube ascending through the water is a sure sign of danger from want of water. A lead gas-pipe, extending between the floor of the board-room and the ceiling of the committee-room was also found slit on one side, and it is suspected that an escape of gas had been going on there for some time. If so, the space beneath the floor of the ceiling would probably be full of gas, ready to ignite the moment that the explosion took place. Had the pipe not been enclosed, the smell of the escaping gas would have given timely warning of the leakage. This disaster, following on the alarming explosion in the vegetable market in this town, and the destructive explosion at Masbrough, ought to induce habits of greater caution and circumspection among consumers of gas generally. Parties competent to form an opinion thought that the necessary repairs to the workhouse could not cost less than a hundred pounds.——The spirits of light and darkness, says *Felix Farley*, are struggling at Taunton, in the shape of gas and anti-gas partisans. This populous town was again left on Tuesday night in a state of utter darkness; our public functionaries having failed to effect an arrangement to obviate this dangerous annoyance.——A deficiency of gas is also complained of at Newcastle and Gateshead, where there is often a scarcity of coals (!), as we once more particularly explained to our readers. In the present instance, however, mere annoyance to the consumers is alleged to be the cause of the deficiency. The complaint, according to the *Gateshead Observer*, is very general throughout both towns, and a rival establishment is threatened.——In Hartlepool, says a contemporary, 6s. 8d. per 1,000 feet is charged to private consumers, whilst at Durham the price is from 3s. to 4s., according to quantity, and at Sunderland, 4s. net. The gas consumers at Hartlepool are endeavouring to effect a reduction to the Durham rates.——The lecturing campaign is recommencing. At the Portsmouth Athenæum, on Monday last, Mr. G. Garnett addressed an assemblage of gas consumers and others on the subject of gas-light, when he "took the opportunity," says the *Hants Independent*, "of explaining and demonstrating the misapprehension existing as to the interest of the gas manufacturers being the supplying of an inferior article at an exorbitant price, and endeavoured to prove on the contrary that it was the interest of the latter to supply the very best article at the lowest possible price—for by doing so alone could the manufacturer hope for an increased demand."

The Birmingham Exposition of Manufactures and Art has closed. During the last week the rooms were visited by nearly 19,000 persons, and the total number of visiters since the commencement exceeds 100,000. The receipts have been about 3,065*l*. There will, doubtless, after payment of all expenses, be a handsome surplus; and we again express a hope, in which we are joined, we see, by the local press, that it may be devoted to the establishment, in the shape of a Museum of Art, of a permanent and classified Exposition of Birmingham Manufactures.

Builders' Benevolent Institution.—It has been determined by the directors of this Institution, to have a second anniversary ball in aid of their funds, and a committee has been appointed to obtain stewards, and make other arrangements.

A Gateshead Contribution to a Turkish Mosque.—When Mr. W. L. Harle was discoursing of "progression and improvement," before Salih Effendi and the Gateshead Mechanics' Institute, and Mr. Wornum was dilating in the lecture-room of the Lit. and Phil. on the magnificence of the mosque of Amrou, few were aware that we had "cunning workmen in brass" employed on the Tyne in the construction of a gas-chandelier for a Turkish mosque in Constantinople. Mr. Thomas Crawford, of the Walker ironworks, acting on behalf of his brother, Mr. James Crawford, of Beshicktash, Constantinople, now manager of the gas-works in the Turkish capital, lately handed the order for it to Messrs. Abbot and Co., of Gateshead Park ironworks. We have seen it lighted up, with its twelve lamps of ground glass, and think that our Mahomedan brethren will agree with us that it does credit to old Gateshead. The circle on which the lights are fixed is 8 feet in diameter. The dome of the mosque rises 65 feet from the floor, and the diameter is 40 feet. In accordance with instructions, the design is plain, yet elegant. The material is brass, French-bronzed. The ornamental work consists wholly of foliage. Crosses or glass drops—figure of man or beast—Messrs. Abbot were forbidden to introduce. Additional burners and glasses are to be sent, with several yards of caoutchouc or gutta percha tubes (another illustration of "progression and improvement")—from which we may infer that moveable lights are wanted. Thus, then, not only in the Gateshead Mechanics' Institute, but also in the mosques of the East, the sons of men have emerged from the obscurity of "tallow candles" into "gas and grandeur."—*Gateshead Observer.*

An Irish Ecclesiological Society has been established. The president is the Rev. Charles W. Russell, D.D., Maynooth; and Lords Bellew and Arundel and Surrey, Sir W. Lyons, and several of the prelates and priesthood, and other members of the Roman Catholic Church, have joined the society. At the opening of its proceedings, the president gave an inaugural address in which, speaking of its object and design, he said, "To regulate the true principles of Christian Art, especially in the building and decoration of churches, is the object of the science of ecclesiology. For though in its more limited application, and in the more strictly technical sense of the name, it might seem to be confined to one particular department, that of architecture, it is understood, nevertheless, to embrace all that relates to the externals of religion, and to comprise not alone architecture, but also painting, sculpture, church decoration, ecclesiastical costume, glass-staining, music, engraving, illuminations, and some ornamental typography in adaptation of sacred uses. Such, I may add, are the objects to which our society proposes to devote its humble labours." *The Amateur* is of opinion that in Ireland "there is ample room and verge for several such societies, each suited to the religious temperature of their respective communions, but all tending to encourage a closer connection of art with Christianity, and thus raising it to the highest purposes of its mission, as an element in the service of the Creator, and leading the mind to the highest and holiest thoughts."

The Bristol and West of England Architectural Society, held a general meeting on the 10th inst., the Archdeacon of Bristol, in the chair, when the secretary, the Rev. E. J. Carter, read the minutes of the previous meeting, and after some formal business, the Rev. Mr. Ellacombe communicated a paper on Church Bells and Belfrys, in which he went into their origin, and exhibited various illustrations of the large bells of some of the principal churches in England and on the Continent. His remarks were also illustrated by the model of a church bell. Mr. Ellacombe discountenanced the popular supposition respecting the baptism of bells, and thought the water used at the time of their being put up was merely for the purpose of washing them. He thought the ceremony used, which he had with him, implied merely a benedictive consecration. He afterwards went into some interesting particulars respecting the weights of the various large bells in Europe and the manner of fixing and ringing them, and also enlarged upon the subject of peal ringing as practised in England. He then read some remarks on bell-ringers and their conduct, which he was sorry to say was very bad, and he thought ought to be brought under the notice of the authorities.

The Metropolitan Commission of Sewers had meetings on Friday and Saturday last, at which the only public business done consisted in the dismissal of Mr. Hale, C.E., an officer of the court, for allowing an article, headed "Experiments on the discharge of Water through Pipes," to appear in the pages of a contemporary before the commissioners had had an opportunity of considering the same, or the results of the same experiments, which had been instituted at the expense and order of the commission. The court then formed itself into a committee (at which the majority of the city representatives were present) "to consider the course to be adopted respecting the plans sent in to the commissioners for the drainage of the metropolis."

The Liverpool Architectural Society.—The fortnightly meeting of this society was held on Wednesday evening, last week; Mr. J. A. Picton occupying the chair. The architectural designs for the student's prize were suspended on the walls. Mr. Reed, the secretary, exhibited a model, and made some observations as to the method of deafening floors adopted by Fox and Barrett. Mr. Howard offered some remarks on decoration, the laws of proportion, and the various styles of ornamenting in general use.

Marsden's Stench Trap.—This trap is so constructed that it is always shut, and it will carry off any dirt or rubbish which may fall through the grating over it. It consists mainly of a cylinder, divided into four chambers, which turns on a pivot below the receiver, and is made air-tight by means of vulcanized India rubber. On receiving water from above, the cylinder revolves, bringing beneath the receiver another division, and emptying the first. The inventor suggests that, by means of a stream of water and a pipe from the gulley-hole to the top of an adjoining house, the cylinder, in revolving, would serve to ventilate the sewer.

Mr. Robert Stephenson, the engineer, has been made a Knight of the Order of the Legion of Honour.

Stealing from the Vatican.—A great sensation has been caused in Rome by the discovery that no less than 137 valuable medals have been stolen out of the museum of the Vatican. Some of these medals were of great rarity, and their loss is a public misfortune.

Railway Jottings.—The springing of some arches was observed on Tuesday week, at the new station, at Liverpool, of the Lancashire and Yorkshire and East Lancashire Company. The pressure of a heavy wall, by which they are surmounted, is blamed. Balk timbers were immediately prepared, and applied as buttresses to the wall and centres to the arches, and the wall itself is in course of renewal.——A contractor for excursion trains has announced his intention of taking passengers, "first-class travelling at less than a halfpenny a mile, and second-class for about a farthing." From Leeds to Birmingham, 238 miles, the fare is to be—first-class, 8s. 6d., and second-class, 5s. 6d., allowing six hours in Birmingham, or the privilege of returning on the following day for an extra shilling. At the ordinary rates of travelling, the journey could not be accomplished for less than between 3*l*. and 4*l*., and at a penny a-mile, would amount to a few pence short of 1*l*.——The new directors of the York, Newcastle, and Berwick Railway have adopted the principle of public competition, in the appointment of three general managers; one for passenger-traffic, at 500*l*. per annum; a second, for mineral traffic, at 400*l*.; and a third, for merchandise, at 400*l*., each manager's salary to be increased *pari passu* with the Company's profits.——The masonry of the piers in the bridge across the Tweed, at Berwick, was completed on Thursday week by Messrs. J. Graham and G. Storrar, sub-contractors, under Messrs. M'Kay and Co.——The remarkable feat of effecting a communication between London and Paris in eight-and-a-half hours, has been accomplished. The *Times* of Tuesday week was delivered in Paris at half-past one p.m., along with the Paris intelligence of Monday.

EXHIBITION OF ALL NATIONS.—A Royal Commission will be issued in a few days, for the purpose of inquiring how the great exhibition of the works of industry of all nations, in 1851, may be best carried into effect. It is likely that the commissioners will consist of the heads of all political parties, some members of the present and past administrations, and some eminent in agriculture, science, art, commerce, and manufactures. In addition, we believe, the commission will provide for the appointment of local commissioners, both at home and abroad, to any extent that may be thought desirable. The contract on the part of Messrs. James and George Munday, for providing the building and taking the risk of the exhibition as a financial speculation is now before the public. We have received a number of letters on the subject, but cannot at this moment go into the matter.

TO CORRESPONDENTS.

"Subscriber from commencement" (every case is special: a general answer would be useless), "H. S.," "F. C. S." (take proper advice), "W. J. H." (thanks: we had two letters on same subject in type), "S. P. H. W." (we are unable to comply), "C. H.," "R. C. S.," "Journeyman Bricklayer" (shall not find his class disregarded, "Mr. T.," "J. C.," "Messrs. J. J. T. and M." (thanks), "H. B." (the object must be to cheapen sewers, not to increase their cost), "W. F. B." (permeable sewers are not a novelty), "S. S. R.," "E. R." (covers are to be had), "M." (Wolverhampton), "J. B.," Temple (thanks), "J. J. J.," "B." (Liverpool), "H. C. B.," "G. P. S.," "R. H." (Ely), "W. C.," "Pythagoras," "W. W.," Winchester (we are compelled to decline giving addresses), "W. E.," "B.W." (shall hear from us), "W. B." (air syphon), "Capt. K.," "J. P. H.," "J. B.," Canterbury (we do not see the drift of the letters. We will give attention to any matter forwarded to us), "R. M. P.," "J. E.," "Veri Amator," "J. L.," "Veritas," "A York Builder" (ask the publishers, Simpkin and Marshall, London), "Surveyors, Ealing" (Mr. Skae wishes it mentioned that his tender was 60*l.* not 40*l.*)

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

ARCHITECTS', BUILDERS', and GENERAL FIRE and LIFE INSURANCE COMPANY, 69, Lombard-street, London.

CHAIRMAN, SYDNEY SMIRKE, Esq., A.R.A.

TRUSTEES.

T. L. Donaldson, Esq. | A. Salvin, Esq., F.S.A.
S. Grimsdell, Esq. | G. Smith, Esq., F.S.A.

The rates for both Fire and Life Insurances are as low as can with safety be taken. Those for Life Insurance may be paid either yearly, half-yearly, or quarterly; one-half the annual premium may be left unpaid for seven years, or one-third to the end of life. Thus large sums may be insured at the smallest present outlay.

Prospectuses, forms of proposals, &c., may be had at the Office 69, Lombard-street, or of the agents.

JOHN REDDISH, Manager.

SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY, for MUTUAL ASSURANCE Incorporated by Royal Charter. Established in 1831. Founded on the Model of the "London Equitable."

LONDON OFFICE, 61 A, MOORGATE-STREET.

PHYSICIAN—JOSEPH LAURIE, M.D., 12, Lower Berkeley-street, Portman-square.

SOLICITOR—CHARLES LEVER, Esq., 1, Frederick-place, Old Jewry.

HEAD OFFICE, 26, ST. ANDREW-SQUARE, EDINBURGH.

The EXISTING ASSURANCES amount to upwards of Three Millions sterling.

The ANNUAL REVENUE amounts to One Hundred and Fourteen Thousand Pounds.

The ACCUMULATED FUND to nearly Half a Million sterling.

The WHOLE PROFITS are allocated amongst the Policyholders every three years.

A Triennial Allocation will take place at 1st March, 1850.

A Policy of 1,000*l.* effected on 1st March, 1833, and becoming a claim before 1st March, 1850, will have increased by these additions to FOURTEEN HUNDRED and TWENTY-NINE POUNDS, and other policies in proportion.

Table of rates and form of proposal may be had on application at the Society's Office, 61 A, Moorgate-street, City.

WM. COOK, Agent.

UNITED TRADES and GENERAL LIFE and FIRE ASSURANCE ASSOCIATION (provisionally registered).—CAPITAL, 100,000*l.*, in 10,000 Shares of 10*l.* each, with power to increase the same to 500,000*l.* Deposit, 1*s.* per share; 10*s.* to be paid on complete registration. No call to exceed 10*s.* Three months' notice to be given of each call.—Temporary Offices, 67, Charlotte-street, Fitzroy-square, London.

The objects of this Association are to adapt to the wants, and bring within the means, of the trading and industrious classes, by especial provisions made for their convenience, the advantages of Life and Fire Assurance, and to invest its funds in a beneficial manner, by loans advanced to the share and policy holders. Parties desirous of promoting the interests and welfare of the working classes, and, at the same time, of realizing a profitable return for their capital, are invited to support the Association.

Applications for shares, prospectuses, &c., may be addressed to the Offices, or to H. EMPSON, Esq., Solicitor, 27, Bucklersbury, City.—By order, JOSEPH REEVE, Secretary.

J. W. LINDRIDGE, Medway Grey Stone Lime Burner, Rochester, begs to inform builders, contractors, and others, that he has OPENED A WHARF, for the Sale of Grey, White, and Chalk Limes, Sand, Cement, Pots, Tiles, &c., wholesale and retail, No. 78, QUEEN'S WHARF, GREAT CAMBRIDGE-STREET, HACKNEY-ROAD, in conjunction with Pembroke Wharf, Caledonian-road, Islington, and 242, High-street, Wapping.—N.B. Orders of any magnitude will be promptly attended to.

MARTIN'S PATENT FIRE-PROOF and ORNAMENTAL CEMENT—REDUCTION of PRICE.—The Patentees beg to inform their Friends and the Public that they have made arrangements which enable them to offer this invaluable cement at a considerably reduced price. It has now been before the public so many years, and has obtained so high a standing in the estimation of all who have used it, that it is unnecessary to comment on its merits. The Patentees, however, feel called upon to observe, that by its use—from the greater amount of surface which a given quantity will cover, and the small amount of labour required in working it, a saving of 25 to 30 per cent. is effected as compared with other cements for internal use. Specimens shewing its beauty, hardness, and applicability to all plain and ornamental purposes, may be seen; and the Cement in any quantity obtained of the Patentees, Messrs. STEVENS and SON, at their Plaster and Cement Works, 186, Drury-lane, London.—Agent for Liverpool.

Mr. GEORGE NEWTON, No. 6, Lawton-street, Bold-street.

GRAY STONE and WHITE FLAME LIME WORKS, BEWLAY CLIFF, on the Medway, KENT.—GEORGE POTTER and CO., having added the old and well-known business at the Purfleet Wharfs, Earl-street, Blackfriars, and Camden-town, to their former town establishments, are ready to supply Contractors, Builders, Gas Companies, and the Trade generally, with Gray Stone, White Flame, and Chalk Limes, upon the usual terms. Annexed is a list of their wharfs:—

City—Purfleet Wharf, Earl-street, Blackfriars.
Pimlico—Grosvenor Basin.
Chelsea—Druce's Wharf.
Paddington—No. 19, North Wharf (adjoining Great Western Terminus).
Camden-town—James-street.
City-road Basin—Wharf-road.

EMERSON'S PATENT LIQUID CEMENT is ready for use, is simple in its application, and only ONE-EIGHTH the cost of oil paint; for beauty it is pre-eminent over all other materials used on the fronts of houses, giving the exact appearance of FINE CUT STONE; can be used at once on fresh Roman cement or other plastering; is particularly calculated for country houses, villas, or gate entrances that have become soiled or dingy, which can be beautified in any weather, at a trifling cost.—Sold in casks of 1, 2, and 3 cwt., at 8*s.*, 15*s.* and 21*s.* each.

PATENT MINERAL PAINT.

Invaluable as a coating for SHIPS' SIDES AND BOTTOMS, all kinds of WOOD or METAL work, roofing felts, leaky roofs, spouts and gutters, doors, sheds, railing, and all kinds of out-door work, and being perfectly waterproof, will preserve their surfaces from atmospheric influence and decay,—requires no preparation, and will dry in a few hours.—Sold in casks, 2 to 50 gallons. Brilliant Black, 3*s.*; Rich Brown, 2*s.* 9*d.* per gallon.

BELL, LEAR, and Co, No. 16, Basing-lane, Cheapside.

3, Ingram-court, Fenchurch-street.

MESSRS. MIALL, MARSHALL, and Co., MANUFACTURERS of ROMAN CEMENT, SUBMARINE BLUE LIAS LIME and CEMENT, and IMPROVED GLAZED STONE WARE TUBULAR DRAIN PIPES, are prepared to supply the above articles of a superior quality, and at reduced prices.

DRAIN PIPES from 2 in. to 24 in. bore.
CLOSET PANS, TRAPS, BENDS, JUNCTIONS, SYPHONS, &c.

Offices—3, Ingram-court, Fenchurch-street, London.
Manufactories { Bathside Cement Works, Harwich. / Lavender Dock Wharf, Rotherhithe.
Depots— { Three Cranes' Wharf, Upper Thames-street. / Druce's Wharf, Chelsea.
Agents for Liverpool—Messrs. Lomax and Co., 13, James-street.

All applications for prices, &c. to be made to Messrs. MIALL, MARSHALL, and Co., 3, Ingram-court, Fenchurch-street, London.

ATKINSON'S CEMENT.—This Cement has hitherto been manufactured in Yorkshire, and, through long detention at sea, has often proved stale and unfit for use on its arrival in London. By the arrangement now made, the Cement will be manufactured in London, and thus presented to consumers in a fresh and genuine state, by the sole Agents, J. B. WHITE and SONS, Millbank-street, Westminster.

KEENE'S and PARIAN CEMENTS, for internal stucco, are employed very advantageously in place of wood for skirtings, architraves, and panel mouldings, and for in-door flooring, instead of stone. The peculiar properties of PARIAN Cement allow of its being painted or papered upon within a few hours of its application, and thus render it an important substitute for common plastering in those cases where expedition and beauty of finish are essential.—J. B. WHITE and SONS, Millbank-street, Westminster, Patentees of KEENE'S Cement, Licensees of PARIAN Cement.

PORTLAND CEMENT, as manufactured by J. B. WHITE and SONS, possesses all the properties of the best Roman Cement, but has the advantage over that material of wholly resisting frost. When used as a stucco it does not vegetate or turn green in damp situations, and requires no colouring. Employed as an hydraulic mortar for brickwork, it carries four to five measures of sand to one of cement, and is proved by trial to become harder and stronger in these proportions than Roman Cement with but one measure of sand. This superior connecting power, combined with its eminently hydraulic properties, point it out as the fittest material for building sea and embankment walls, the lining of reservoirs, cisterns, and baths, and for all those purposes where strength and a perfect resistance to water are required.

Manufacturers—J. B. WHITE and SONS, Millbank-street, Westminster, and 36, Seel-street, Liverpool.

PORTLAND CEMENT, solely MANUFACTURED by WILLIAM ASPDIN, Son of the Patentee.—Messrs. ROBINS, ASPDIN, and Co. request reference to No. 256, page 491; and also Nos. 284 and 285, pages 343 and 351 of "The Builder," for accounts of EXPERIMENTS on the strength of Portland Cements, whereby the great superiority of their Cement is manifest. This Cement has been proved for upwards of twenty years in the Thames Tunnel to resist the action of water; it is stronger in its cementitious qualities, harder, and more durable than any other description of Cement; it does not vegetate, oxydate, or turn green; nor is it affected by any atmospheric influence whatever the climate, resisting alike the action of frost and heat. It is manufactured to set in from five to sixty minutes. For all purposes that Cement is applicable the Proprietors challenge competition.—Orders received by Messrs. ROBINS, ASPDIN, and Company, at their Manufactory, Northfleet, Kent, and their Wharf, Great Scotland-yard, Whitehall; also by their Agent at the Depôt, 1, Back Goree, Liverpool.

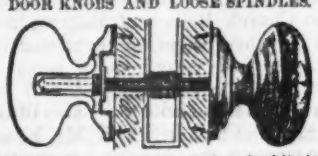
THE PARIAN CEMENT, for INTERNAL STUCCO, which you supplied at Messrs. J. & R. MORLEY'S warehouses and dwelling in Wood-street, Gresham-street, in the City, has been used throughout the premises, in every story; altogether about ten thousand yards superficial, chiefly upon recently built walls, and a small portion upon timber partitions, and that with the most perfect and satisfactory result. I feel it also necessary to observe, that the plasterer's work was almost invariably followed up on the next day by the painters, thereby enabling me to have the buildings complete in the shortest possible time, both for business and for the occupation of the establishment. I am, therefore, of opinion, that the use of this new material is a most valuable feature in building operations, and fully justifies that which I was given to understand, viz., that it was an extraordinary material. I think it right to mention that I am at the present time having a great extent of similar work executed at another range of buildings, where time and the quality of the work are of the utmost importance.

(Signed) JNO. WALLEN, Architect, London.

To Messrs. Chas. Francis and Sons, Manufacturers, Nine Elms.

By Her Majesty's Royal Letters Patent.

PITT'S PATENT SELF-ADJUSTING DOOR KNOBS AND LOOSE SPINDLES.



HART and SONS beg to invite the attention of architects, builders, and others, to their Door Furniture, mounted for PITT'S PATENTED SPINDLES. The knobs are stronger, more durable, and more elegant in form, than those in ordinary use, as the spindles, being loose, do not require the objectionable side screw. They are more readily fixed, are suitable for every description of lock now in use, and, as they adjust themselves to doors of different thicknesses, without alteration, are particularly adapted for the country or for exportation.

In addition to an extensive stock of door furniture in china, crystal, amber, and opal glass, buffalo horn, ivory, ebony, brass, &c., en suite, with finger-plates, bell-pulls, and levers, new patterns of original design are constantly being added, and an order either to sketch or pattern supplied very promptly. A simple one, for example, in three days, and a more elaborate one in less than a week.—May be obtained through any ironmonger, or direct from the proprietors and sole manufacturers, HART and SONS Wholesale Ironmongers, 33, 34, 35, Wych-street, Strand, London.

A list of prices sent on application.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, begs to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¼ inch to 1½ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

FLOORING.—ALFRED ROSLING begs to inform his customers and the trade generally, that he has again very materially REDUCED the PRICES of his DRY FLOOR BOARDS, of which he has in stock an extensive assortment. To purchasers of a quantity of freshly prepared boards A. R. is able to offer a great reduction upon his current prices, to avoid the expense of piling away in the drying sheds. Mouldings in great variety, and prepared in a very superior manner.—Southwark-bridge Wharf, Bankside, October, 1849.

THOMAS ADAMS, Mahogany and Timber Merchant, Bermondsey New road, Southwark, near the Bricklayers' Arms, is SELLING SEASONED FLOORING at LESS PRICES THAN ANY ADVERTISED; also matched boards and mouldings prepared from the very best material, and in a superior manner. Cut deals and scantlin of every dimension; mahogany, cedar, rosewood, wainscot, elm, beech, oak, &c.; pantile, oak, and fir laths; wheelwrights' goods. All sawn and prepared goods (except timber) delivered free of expense. Sawing charged at mill prices. Very extensive drying-sheds.

N.B. English timber taken in exchange for foreign.

PRESENT PRICES of SEASONED FLOORING, prepared by improved Machinery. Net cash.

1¼ in. yellow, per sq.	20*s.* 0*d.*	1 in. spruce, per sq.	13*s.* 6*d.*
1 " " "	17*s.* 6*d.*	¾ " " "	11*s.* 9*d.*
¾ " " "	14*s.* 9*d.*	½ " " "	10*s.* 6*d.*

Widths measured after being wrought. Quantities not less than thirty squares delivered within 5 miles free.

SAMUEL ARCHBUTT and CO., Timber Merchants, Sawing and Planing Mills, King's-road, Chelsea.

MUIR'S PATENT PLANING MACHINE

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM, Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

GENERAL WOOD-CUTTING COMPANY.—SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, between the Suspension and Waterloo Bridges. SAWING and PLANING in all their branches executed with the greatest despatch and punctuality. A large Stock of seasoned and beautifully WORKED MOULDINGS, consisting of upwards of 100 different patterns kept constantly on hand; also an extensive assortment of dry prepared FLOORING BOARDS, of all qualities and at reasonable rates.

PHILLIPS, ALLCARD, and CO.'S IMPERIAL DEAL SAW-MILLS, WENLOCK-ROAD CITY-ROAD, beg to invite the attention of builders, carpenters and the trade, to their well selected stock, consisting of a large assortment of TIMBER, DEALS, PLANKS, and BATTENS, of every description, and thoroughly seasoned. They also have constantly on hand, and ready for immediate use, white and yellow prepared FLOORING BOARDS of all thicknesses, and matched lining, cut and planed to a parallel breadth and thickness. And they are enabled to offer all their goods at very moderate prices

THE TIMBER PRESERVING COMPANY.—The Directors of the above Company beg to inform the public that they have REMOVED their MACHINERY to DURRAND'S WHARF, ROTHERHITHE, where they prepare timber by Payne's, Bethell's, and Margary's process.—Offices of the Company, Whitehall Wharf, Cannon-row, Westminster.

DESICCATED WOOD.—DAVISON and SYMINGTON'S PATENT.—Builders, Cabinet-makers, and others, will find it much to their advantage to patronise this new process of seasoning. The greenest wood can thus not only be seasoned in an incredibly short space of time, at a small cost, but is rendered stronger, entirely free from shrinkage, and in every respect better than wood treated in the ordinary way; thereby saving capital, interest of money, insurance, and all the other inconveniences attending the keeping of a large stock.

The DESICCATING SAWING and PLANING MILLS are situated at PLOUGH BRIDGE, ROTHERHITHE, adjoining the Commercial and East Country Docks, from whence parties obtaining their material can have the same converted as required, and sent home fit for immediate use.—T. GIRLING, Manager.

For licenses to use the patent, scale of prices, or other information, address, ANGUS JENNINGS, Secretary, Patent Desiccating Company, 41, Gracechurch-street, City.

PATENT HANDRAILS WITHOUT HEADING JOINTS, now so well known and justly appreciated, being patronized by the most eminent Architects.—J. MELVILLE informs Architects, Builders, and the Trade in general, that having recently erected an improved steam apparatus, which, by causing a saving of fuel, and otherwise giving greater facility to the execution of the work, he is enabled to make a reduction of 10 per cent. on his former prices. Prices and patterns forwarded to any part of the country (on a reference being given), and Architects or Builders waited on in London.—7, John-street, Fitzroy-square, London.

TO ARCHITECTS, BUILDERS, UPHOLSTERERS, AND OTHERS.

WOOD CARVING done in the cheapest and best manner. Estimates given to any amount. Pulpits, reading-desks, altar-rails, stalls, and other church fittings supplied complete. Old carvings restored by J. STALON, Wood Carver and Manufacturer, 42, Berwick-street, Soho, London.

JORDAN'S PATENT MACHINE CARVING and MOULDING WORKS for WOOD and STONE, Belvedere-road, Lambeth, and 154, Strand.—TAYLOR WILLIAMS, and JORDAN beg to call the attention of the building community to a new feature of their establishment, and, at the same time, to thank their numerous patrons and friends for the very liberal support they have lately experienced, which, they assure them and the public, it will be their constant endeavour to deserve, by giving their customers an increasing share of the advantages arising from the constant improvements in the machinery which they have just succeeded in applying to the production of the most intricate carving in Caen and other freestones, and in statuary marble.

T., W., and J. particularly solicit the attention of architects and builders to the fact that, by the use of this machinery, a very large saving, both of time and money, is effected,—so great, indeed, that in many cases they can deliver a well-finished article in Caen stone for less money than it can be obtained in cement, while their wood-carving will, in some cases, be found to come into close competition with the best kinds of composition ornament.—For prices and estimates apply at 154, Strand.

TESTIMONIAL FROM CHARLES BARRY, ESQ.

"Westminster, May 16th, 1849.

"Gentlemen,—In reply to your letter requesting my opinion of your Patent Carving Machinery, I have much pleasure in stating, from an experience of more than two years, in its application to the production of the wood carvings of the House of Peers, and other apartments of the New Palace, at Westminster, that I am enabled to make the most favourable report concerning it, and to add that it has more than justified the favourable terms in which I recommended it in 1845 to her Majesty's Commissioners of Woods and Works for adoption.—I remain, Gentlemen, yours faithfully,

"CHARLES BARRY."

Messrs. Taylor, Williams, and Jordan."

IMPORTANT IMPROVEMENTS IN WARMING AND VENTILATING

CHURCHES, CHAPELS, INFANT AND OTHER SCHOOLS, PUBLIC BUILDINGS, PRIVATE DWELLINGS, &c. &c.

PIERCE'S PATENT PYRO-PNEUMATIC STOVE GRATE

Is SELF-ACTING, and combines SUMMER WARMTH, PERFECT VENTILATION, SIMPLICITY OF ARRANGEMENT, NOVELTY OF PRINCIPLE, and ELEGANCE OF DESIGN, which, with great ECONOMY IN USE, renders this GRATE suitable for any situation where a POWERFUL DEGREE of WARMTH and the CHEERFUL OPEN FIRE are desirable.

PIERCE having at length succeeded in producing that long-sought *desideratum*—a HEALTHFUL AND SALUBRIOUS atmosphere, such as is felt on a pleasant summer's day, which can, by means of this his Patent Pyro-Pneumatic Stove Grate, be enjoyed during the most dull and dreary of our winter months. The above invention is specially adapted for warming churches, infant and other schools, railway offices, entrance halls, banking houses, &c., &c., or any situation where warmth and purity of air are desirable.

IT MAY BE SEEN IN DAILY USE AT THE PATENTEE'S MANUFACTORY, 5, JERMYN-STREET, REGENT-STREET;

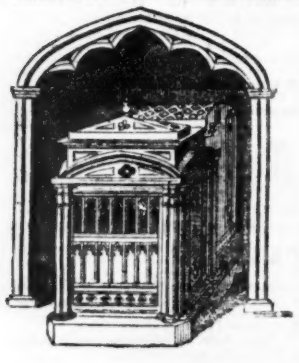
Also at the POLYTECHNIC INSTITUTION; the UNIVERSITY HALL, GORDON-SQUARE; the new OSTRICH and GIRAFFE HOUSES of the ZOOLOGICAL SOCIETY, REGENT'S-PARK; the large MODEL ROOM of the SOCIETY OF ARTS, JOHN-STREET, ADELPHI, where, after a lengthened trial of it in daily use, the Council awarded their large Silver Medal for the invention.

PIERCE'S PRACTICAL EXPERIENCE (of upwards of thirty years), during the whole of which time he has been actively engaged in WARMING and VENTILATING PUBLIC BUILDINGS and PRIVATE MANSIONS of all descriptions by his Improved Method of HEATING with HOT WATER; also his ECONOMICAL RADIATING STOVE GRATES, which are elegant and effective, enable him to recommend this PYRO-PNEUMATIC GRATE with the utmost confidence,—the Air breathed from which has all the FRESHNESS and PURITY of the EXTERNAL ATMOSPHERE, and consequently its action meets the want, which has so long been felt, of some method whereby the houses of all, both rich and poor, might be alike rendered healthful.

PIERCE'S MANUFACTORY AND SHOW-ROOMS, 5, JERMYN-STREET.

Where innumerable Testimonials and References can be given.

N.B. THE TRADE SUPPLIED, AND A LIBERAL DISCOUNT ALLOWED.



FOR CHURCHES, CHAPELS, SCHOOLS, WAREHOUSES, PRIVATE DWELLINGS, &c. &c.

NOTT'S PATENT STOVES,

After TWENTY YEARS' TRIAL, still maintain their decided superiority. They give twice as much heat as any other stove, with a smaller consumption of fuel; they burn for eight or ten hours without replenishing; they do not generate offensive and dangerous gases; and they have, when lighted, a very

BRILLIANT AND CHEERFUL APPEARANCE FROM THEIR TRANSPARENT FRONTS.

By the addition of a BOILER AND HOT-WATER PIPES, they may be made to heat, at the same time, DISTANT APARTMENTS, CONSERVATORIES, &c. They are made in various sizes and patterns, and the PRICES have recently been GREATLY REDUCED.

A STOVE AT TWELVE GUINEAS, AS SHEWN AT SIDE, WILL WARM A SMALL CHURCH.

Two or three hundred references can be furnished on application; only a few can be mentioned here, viz.:—

St. Saviour's Church, Southwark.
Christ Church, Westminster.
Trinity Church, Brompton.
Old St. Pancras Church.
Christ Church, Hoxton.
St. Vedast's, Foster-lane.
Portman Chapel, Baker-street.
The Pantheon, Oxford-street.
National Debt Office, Old Jewry.
Picture Gallery, Knightsbridge (late Chinese Exhibition).
Religious Tract Society, St. Paul's Churchyard.
Mr. Parker, West Strand.
Mr. Gilbertson, Ludgate-hill.
Messrs. Perkins and Bacon, Fleet-street.
Messrs. Ridgway and Co., King William-street.
St. Pancras National Schools,
Finsbury Charity Schools.
Stepney Grammar School, &c. &c.

J. L. BENHAM AND SONS, 19, WIGMORE-STREET, CAVENDISH-SQUARE, PATENTEES.

N.B. Also, a Large Stock of Arnott's, Cundy's, Chanter's, Chesterman's, Joyce's, Walker's, Chunk, Suspension, and other Patent Stoves.

STIRLING'S BELVEDERE SLATE

WORKS, Belvedere-road, Lambeth.—A reduced list of prices of the best WELCH SLATE SLABS, planed both faces, will be sent on application (post paid) being made, and inclosing a postage stamp. The prices are under those advertised for inferior slates.

VALENTIA SLATE SLABS.—The attention

of the public is invited to the large importations now being made of this valuable material from the county of Kerry, Ireland. Its strength, durability, and non-absorbent property, recommend it for general use. The experiments made by command of the Board of Ordnance establish that to break slabs of equal dimensions required

	C.wt.	qrs.	lbs.
For Yorkshire Stone	2	2	22½
For Valentia Slate	11	1	25

It is well adapted for shelves, cisterns, paving, &c.—Depôt, Valentia Slate Yard, Millbank-street.

PIMLICO SLATE WORKS.—GREAT

REDUCTION in the PRICE of SLATE.—Mr. MAGNUS has the pleasure to publish the following reduced prices for Welsh Slate Slabs of the finest quality, with sawn edges, and planed both faces:—

	Thick. ¾ in.	⅞ in.	1 in.	1¼ in.	1½ in.	1¾ in.	2 in.	
	d.	d.	d.	d.	d.	d.	d.	
Under 4 ft. long, or 3 ft. wide	3½	5	6	7	9	12		☐ ft. sup.
Ditto 5 ft. do., or 3 ft. do.	4	5½	7	8	10	14		do.
Ditto 6 ft. do., or 3 ft. do.	4½	6½	8	9	10½	16		do.
Ditto 7 ft. do., or 3 ft. do.	5	7	9	10	11	18		do.

Larger Slabs in proportion.

	Thick. ¾ in.	⅞ in.	1 in.	1¼ in.	1½ in.	1¾ in.	2 in.	
	d.	d.	d.	d.	d.	d.		
Cutting to order	1	1	1½	1½	1½	2		☐ ft. sup.

FURTHER REDUCTION IN THE PRICE OF CISTERNS.

Cisterns above 100 gallons, planed both faces, inch thick, grooved and bolted, 1s. only per foot super., or 2s. per foot cube (outside dimensions). Fixing within five miles of the manufactory, 3d. per foot super., or 6d. per foot cube. Enamelled boxed Chimney-pieces, variously marbled, hitherto priced at 40s. to 80s. now reduced to 25s. and 30s. The above prices are all net to the trade.

Mr. Magnus will send his book of Drawings of Chimney-pieces, and printed price-list of ditto, free to any part of the country, on receipt of 3s. in postage stamps (to be deducted from first order received), and which will be subject to a very liberal discount to the trade.—Address, 39, Upper Belgrave-place, Pimlico.

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GOTHIC WINDOWS, ALTAR SCREENS, and other Works, produced at a remarkably cheap rate.

FONTS from 5*l.* upwards. Specimens on view of the Early English, Decorated, and Perpendicular styles.

ALTAR TABLETS Illuminated.

First-rate ARTISTS retained for SCULPTURED GOTHIC CARVINGS.

A Good VEINED MARBLE CHIMNEY-PIECE and a fashionable REGISTER STOVE for 3*l.* 3*s.* Stone Chimney-pieces from 8*s.*

MEMORIAL CROSSES, MONUMENTS, TOMBS, HEAD-STONES, &c., in great variety of design. Letters cut and complete for fixing in the country.

The Public are respectfully invited to view the carefully selected and manufactured Stock (by improved machinery) of Veined Marble Chimney-pieces—cheap and good.

A liberal discount to the trade.

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SAMUEL CUNDY, having had much practice in this branch at Westminster Abbey and other important Gothic fabrics, is desirous of Estimating for Restorations.

S. C. has invented a Machine for Hoisting Building Materials to great altitudes, by which an immense saving has been effected; eminently adapted for Restoring Cathedrals, High Towers, &c.

CLERKS of WORKS have their particular attention called to the above establishment. A Book of Designs forwarded on application.

Works of all kinds prepared and sent off per railway—fixed or not, as required.

DAIRIES fitted up with MARBLE or SLATE SHELVES.—MINTON'S Encaustic and White or Blue and White Porcelain Tiles in great variety of pattern.

CAITHNESS STONE, from the Castle-hill

Quarry, by Thurso.—It is prepared at the Quarry, with sawn edges, ready for laying. The faces may be natural, tooled, or rubbed as required. This paving gives great satisfaction, and is supplied of larger dimensions than ordinary. The footpath recently laid on Vauxhall-bridge is all in stones, above 6 feet long, and the paving on the bridge over the Neva, lately supplied by order of the Emperor of Russia, is all in stones of great dimensions.—Applications addressed to Mr. POTTER, 4, Church-row, Newington, will meet with every attention.—Depôt, at Freeman's Wharf, Millbank-street.

MARKET WHARF, REGENT'S-PARK

BASIN.—Messrs. MARTIN and WOOD (late Scoles and Martin) solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c., sold at the lowest possible prices for Cash. Portland Headstones, Ledgers, Steps, Landings, &c., cut to order on the shortest notice. Tarpaulings let on hire. A Stock of Northen's Drain Pipes, Syphons, &c., always on hand. Mortar, Lime and Hair, Fine Stuff, &c.

BATH STONE OF BEST QUALITY.

RANDELL and SAUNDERS,

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List of prices, also cost for transit to any part of the kingdom, furnished on application.

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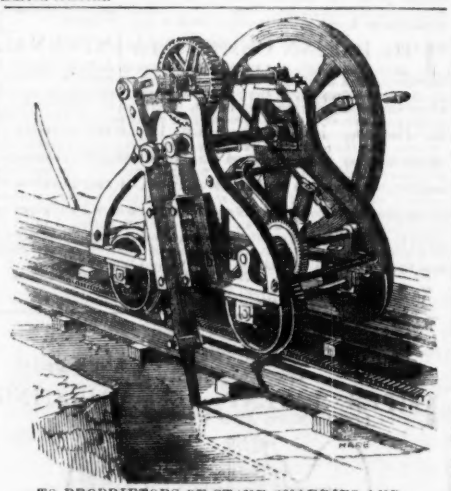
SAUNDERS, Quarrymen, Bath, have appointed Messrs. MARTIN and WOOD their sole agents in London. M. and W. beg to inform Architects, Masons, Builders, &c., that a large assortment of the much approved CORSHAM DOWN and other BATH STONE will always be kept at the Depot, opposite the Great Western Railway Station, Paddington. Orders will also be received at Market Wharf, Regent's-park Basin.

ANSTON STONE, used for Building the

New Houses of Parliament.—W. WRIGHT and Co. beg to inform Architects, Engineers, Builders, and others, the Anston Stone can be supplied in any quantity on the shortest notice. This valuable stone, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all others, by the Commissioners of Woods and Forests, for building the New Houses of Parliament. It is very superior for Monuments, Tombs, &c. &c.

W. Wright and Co. have made arrangements to have a stock always on hand at Brine's Marble and Stone Wharf, Horsfall-basin, Maiden-lane, King's-cross.—Any further information can be obtained on application to W. WRIGHT and Co., Anston, near Sheffield; or to T. SHARP, their Sole Agent in London, 27, Burton-crescent.



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NEALE and WILSON'S REGISTERED

RACING or STONE CUTTING MACHINE.—The efficacy and economy of this simple but powerful machine, in raising stone from the quarry, has been admitted by all who have seen it at work. To the quarry owner it at once recommends itself, not only by the reduction of forty per cent. in the labour of separating the stone from its bed, but also by the saving of at least ten per cent. in the cubical quantity of stone raised. To the builder, the advantage of using stone raised by this machine is equally apparent, by the well-dressed face that it leaves, instead of being rough hewn, as in the ordinary process of quarrying. Manufactured solely by the original inventors, Messrs. NEALE and WILSON, Builders and Engineers, Grantham, at whose Quarries in the neighbourhood one of these machines may be seen constantly at work.—N.B. Messrs. NEALE and WILSON beg also to direct the attention of builders and the public to the true quality of the stone produced from their quarries at Ancaster, seven miles from Grantham, being one of the quarries recommended by the commission appointed for the selection of stone in erecting the new Houses of Parliament, and from which almost every church and mansion of importance in Lincolnshire and the adjoining counties has been built.

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EXTERNAL WORKS.—LUARD, BEEDHAM and Co., Quarry Proprietors and Importers from Allemagne.

AUBIGNY STONE from the Quarries, near Falaise, Calvados Department.—Aubigny is of similar colour to Portland Stone, its texture finer than Portland, price and labour of working about the same.

RANVILLE STONE from Ranville Quarries, near Caen, Normandy.—Suitable for strong works, wharf and quay walling, price and labour similar to Caen Stone.—Depôt, Caen Sufferance Wharf, Rotherhithe; Vauxhall-bridge, Westminster; No. 8 Wharf, Paddington Basin; Northern Wharf, Battle-bridge; and Kensington Basin.—Information and samples supplied from the Office, 18, Southwark-square, Borough.

CAEN STONE.—W. and J. FREEMAN

offer Caen Stone, guaranteed from the best quarries in Allemagne, at 1*s.* 2*d.* per cubic foot, delivered to vessels or waggons from their Sufferance Wharf, at Deptford. Stone from the inferior beds, or from the Maladrerie Quarries (if ordered) on lower terms. Cargoes shipped direct from the quarries to any part of the coast at the same price. Aubigny and Ranville Stone on the lowest terms.—Application at the office, Millbank-street; or to Mr. TURNBULL, Sufferance Wharf, Grove-street, Deptford.

TERRA-COTTA, or VITRIFIED STONE

WORKS, King Edward-street, Westminster-road, London.—M. H. BLANCHARD, from late Coade's Original Works, Belvedere-road, Lambeth, begs to inform the Nobility, Gentry, Architects, and Builders, that he has re-established the manufacture of that invaluable material, which has been successfully adopted by our eminent Architects and others, in the adornment of our noblest buildings, nearly 100 years has proved the imperishable nature of the material, the specimens of those times now exhibiting all their primitive sharpness.

Groups, statues, friezes, capitals, panelling, pinnacles, finials, terminals, Tudor, and other chimney shafts, balustrading, fountains, fonts, tazzas, vases, coats of arms, devises, and every description of architectural ornament, at prices in many instances nearly half the cost of stone.

Specimens of the material to be seen at the Office of "The Builder," 2, York-street, Covent Garden, and at the Works.

STATUES, VASES, FOUNTAINS,

Garden Ornaments, Coats of Arms, and Architectural Embellishments, in Imperishable Stone, by VAUGHAN and Co., 60, Stones'-End, Borough, London. T. J. Croggon, late of Coade's, Superintendent.—Specimens may be seen at CROGGON and Co's, 2, Bowgate-hill, City. A pamphlet of drawings forwarded on application.

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BRICKS of superior quality. Moulded bricks to any pattern.—Apply to Mr. BENJAMIN GOUGH, 37, Newington-crescent, Newington Butts.

N.B. Cowley and Kent Bricks of every description, and Kentish Ragstone direct from the quarries, at a reduced price.

FIRE BRICKS, GREAT FALL.—WARD

and COMPANY, Honduras Wharf, Bankside, London, have the pleasure of informing the trade, &c., that they have just landed SEVERAL CARGOES of their best manufactured FIRE BRICKS, in Stourbridge, Newcastle, and Welsh. Purchasers should avail themselves of the present low prices. STOURBRIDGE BRICKS, admitted to be the best in use, as proved by houses working the greatest heat, 6*l.* 5*s.* per thousand. Their highly celebrated NEWCASTLE ditto, in such general consumption in gas works, breweries, by engineers, and others, 4*l.* WELSH ditto, very superior, from having less iron in them than usual, 4*l.* 10*s.* Lumps, Tiles, Shield Guards, Retorts, Fire Clays, and Loam equally cheap. Cowley bright square Stocks, 35*s.* per thousand; Patent Malting Tiles, Windsor Oven ditto and Bricks; Country Pantiles, 30*s.* per thousand, plain ditto, 32*s.*, all other red goods: white and red Sanitary Pipes and Shapes, Dutch Clinkers, Suffolk Bricks, Dorking Lime, Concrete, Gravel, and river Sand, by freights or loads. Goods made to pattern in twenty-one days.

A liberal Discount for Cash.

BRICKS.—In consequence of the low price

at which Brickmakers have, for some time past, been purchasing Ashes and Breeze, H. DODD is enabled to offer his bricks, which are of good quality, at the following low prices; and as his fields are only a quarter of an hour's walk from the City, H. D. earnestly requests purchasers will favour him with a visit, in order to inspect his stock and to judge for themselves.

Marle Cutters	80*s.*	per thousand.
Yellow Seconds	52*s.* 6*d.*	"
Pale Seconds	50*s.*	"
Paviors	42*s.*	"
Pickings	38*s.*	"

Marle Place, Half-washed Stocks, and Place Bricks, at equally low prices. These bricks are sound, well burnt, and unusually free from defects; a very large proportion of the Stocks being suitable for external facing. They will be delivered at the above prices anywhere within two miles of the fields.

Apply to HENRY DODD and Co., at the Counting-house, Hoxton Brickfields, Grange-walk, near the Rosemary Branch, Hoxton.

N.B. Red Pit Sand, of approved quality, constantly on sale, upon reasonable terms. In the erection of walls, where it is desirable that the work should be kept as free from damp as possible, this sand, from its not containing any saline matter, is acknowledged to be preferable to river sand.